20020508h2001

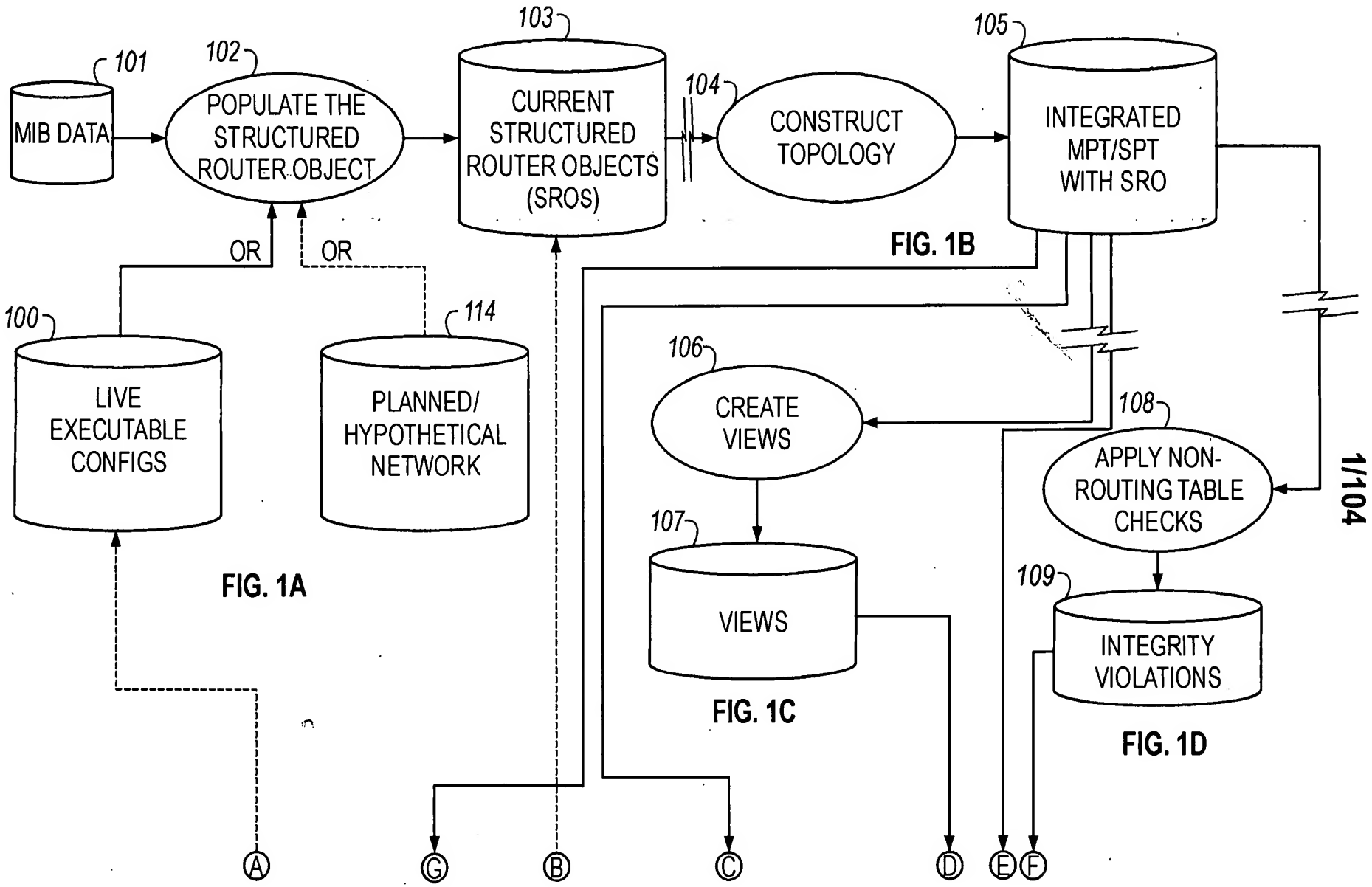


FIG. 1A

FIG. 1B

FIG. 1C

FIG. 1D

1/104

Title: Method of Resolving Conflicts in Access Control Lists...
Inventor(s): R. N. Pelavin, et al.
Express Mail Label No. EL652871260US Docket No. 50325-0630

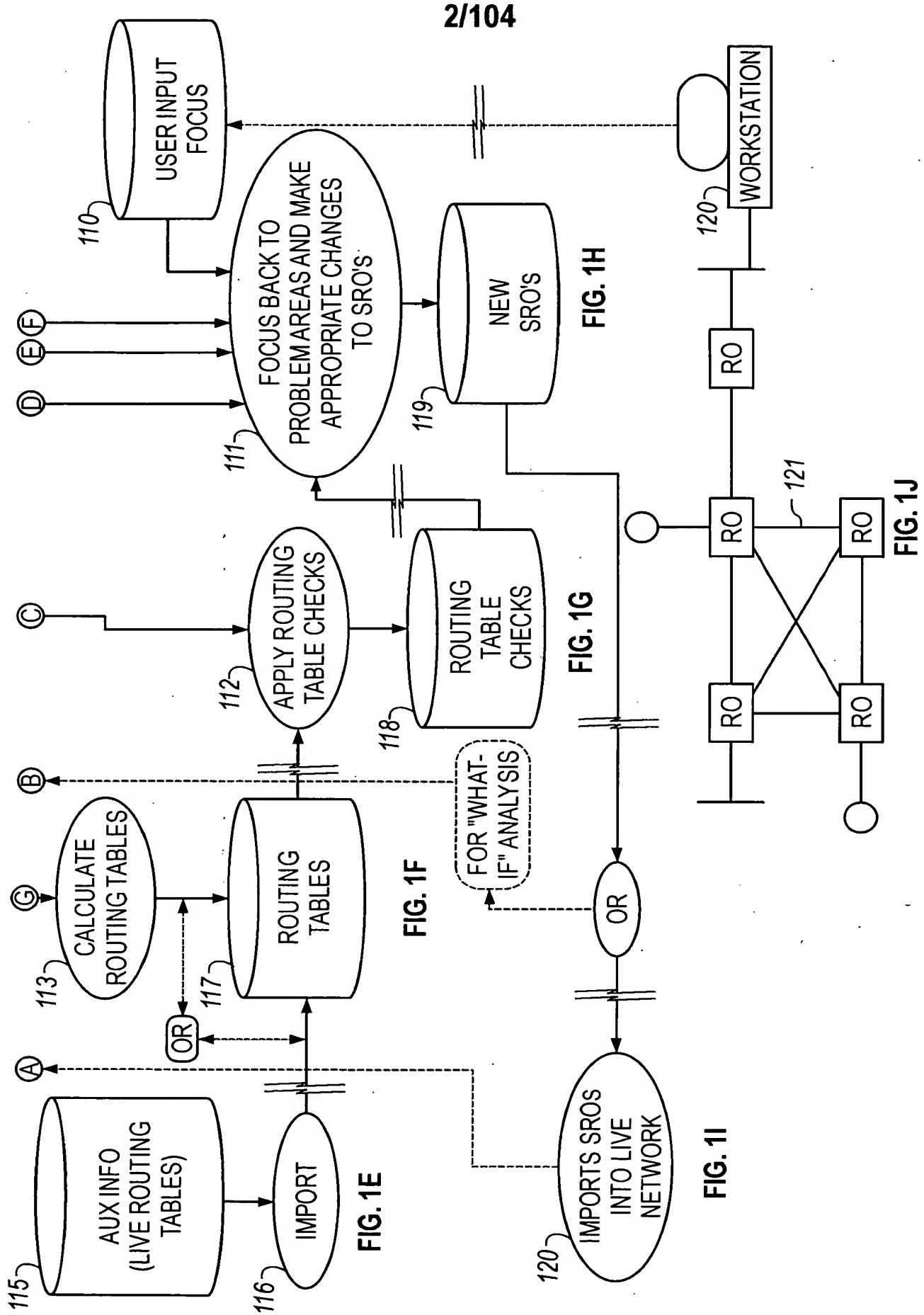


FIG. 1H
FIG. 1J
FIG. 1G
FIG. 1F
FIG. 1I
FIG. 1E

20120-5084Z01T

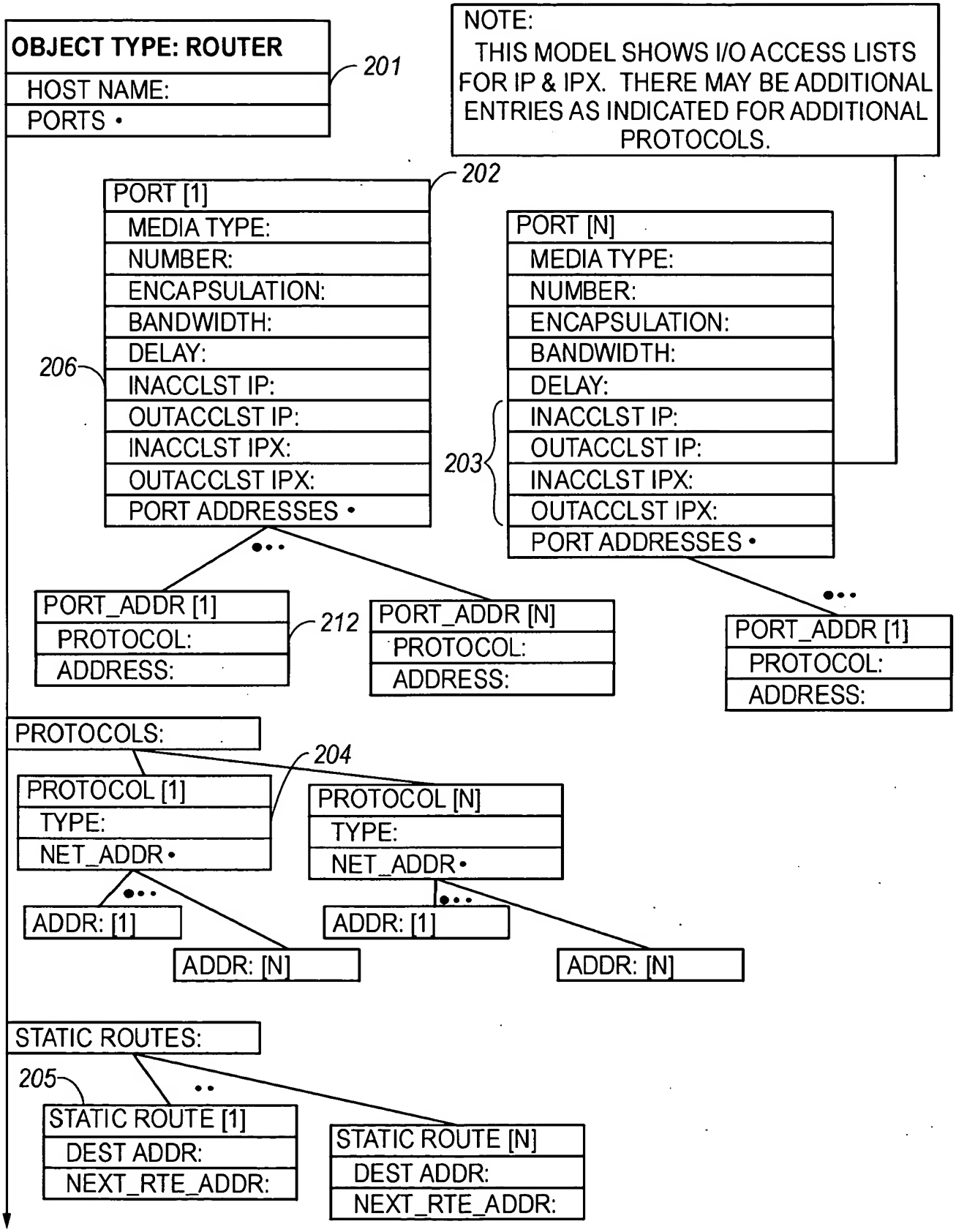


FIG. 2A

02E2E60 "5084700T

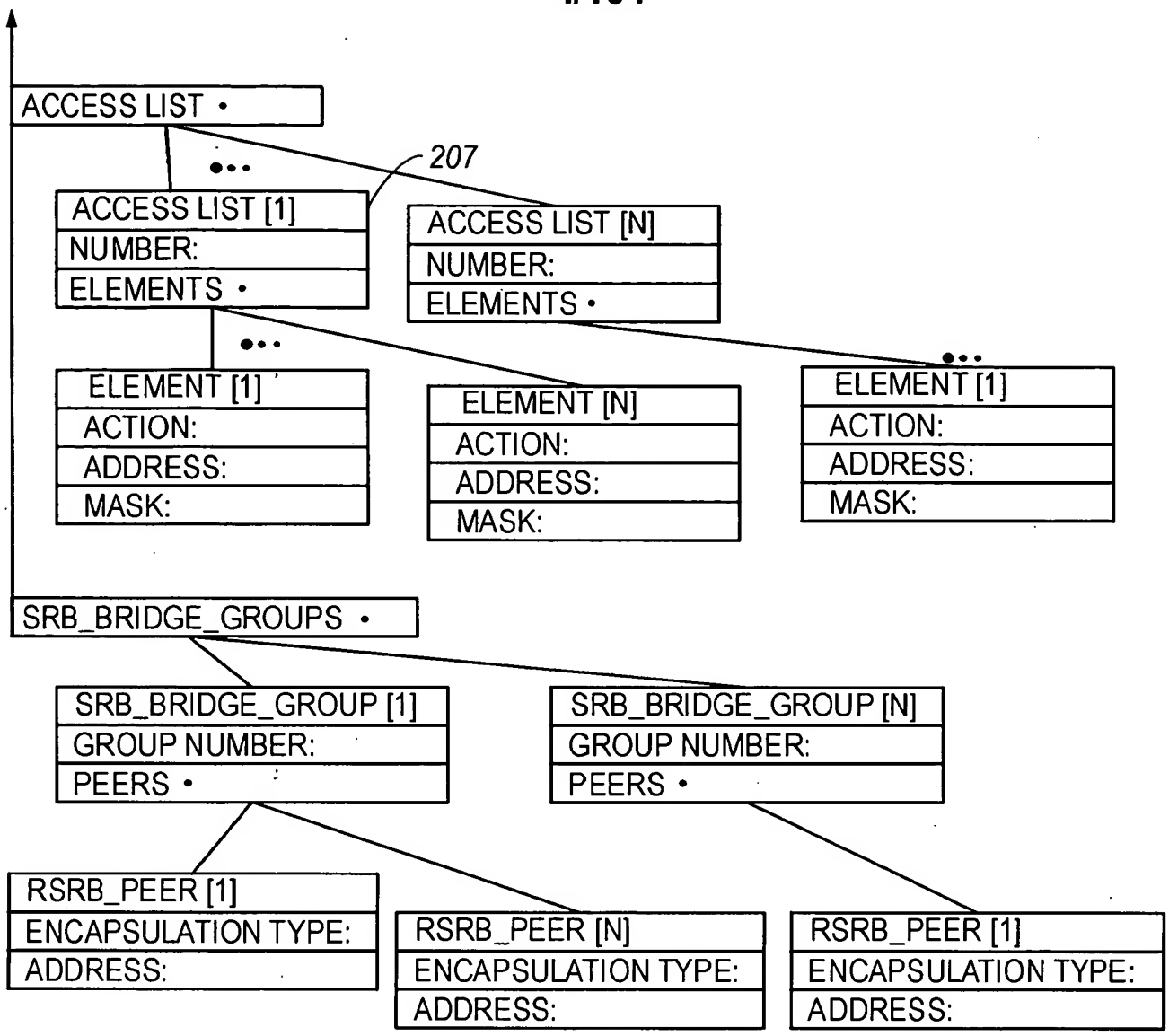


FIG. 2B

Docket #50325-0630

50325-0630 EL652871260US

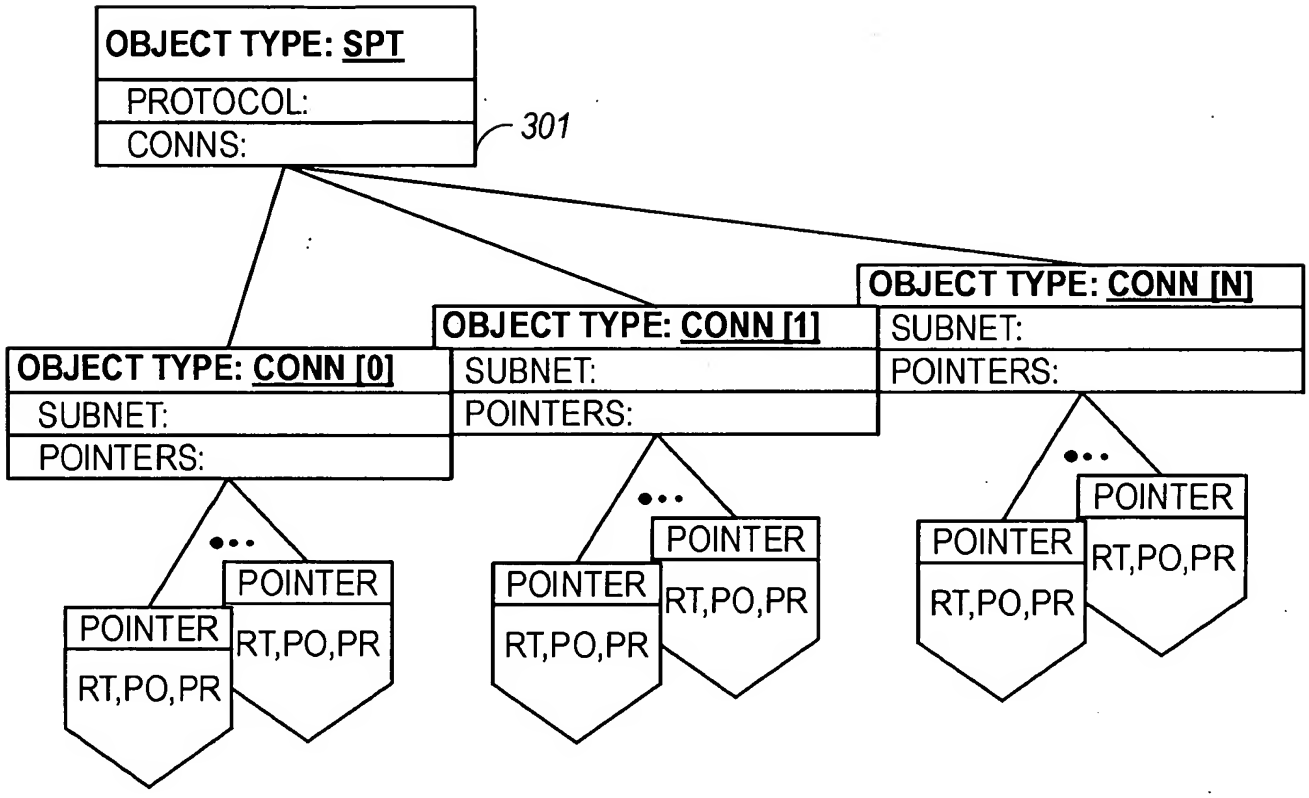
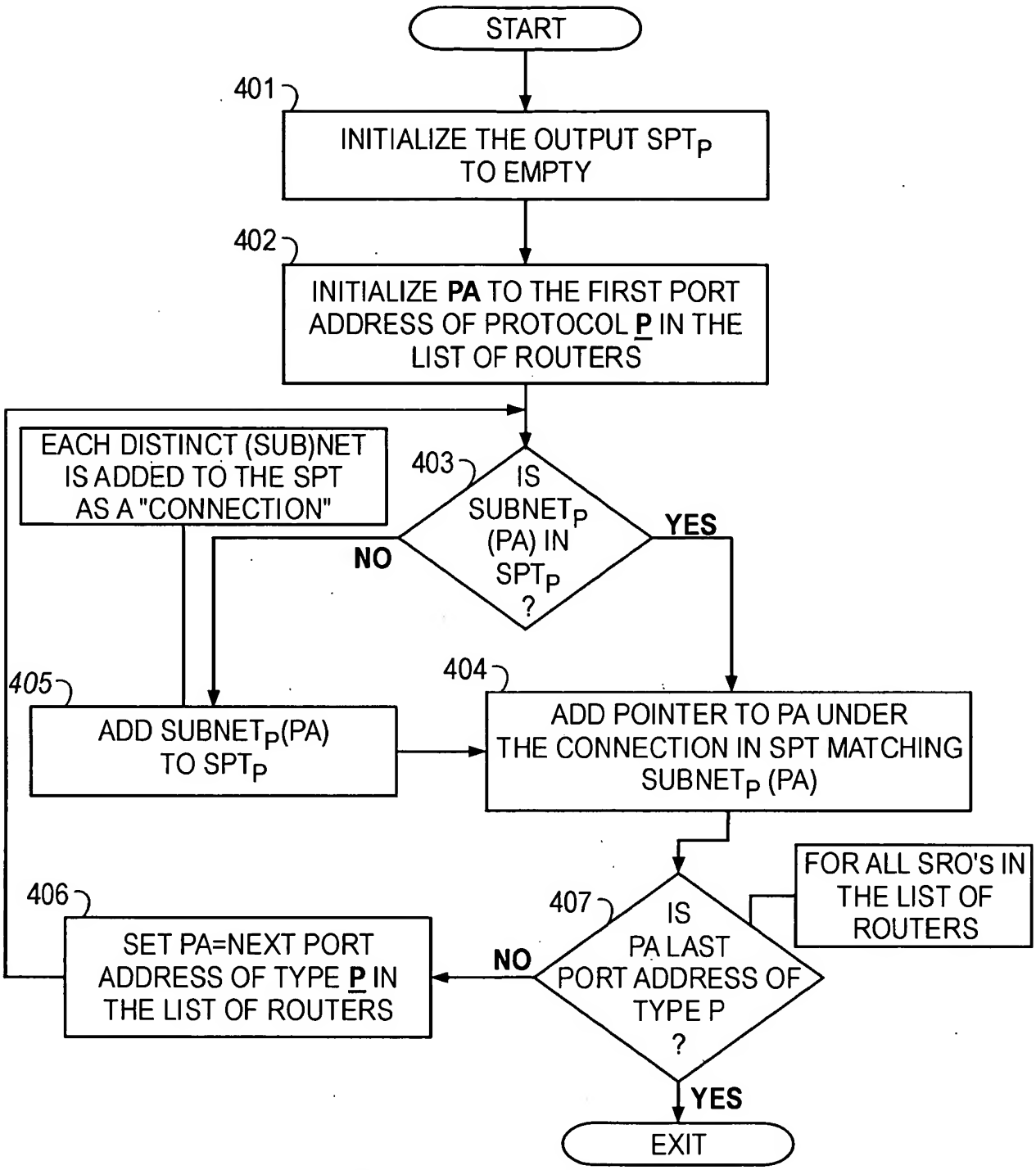


FIG. 3

NOTE:
RT=ROUTER
PO=PORT
PR=PROTOCOL



NOTE- SUBNET FUNCTIONS ARE DETERMINED AS FOLLOWS:

$SUBNET_{IP}([A1\ M1]) = [A1 \& M1)\ M1]$
WHERE "&" IS A BITWISE AND

$SUBNET_{IPX}(NN)=NN$
WHERE NN = IPX SUBNET NUMBER

$SUBNET_{APPLETALK}([CBRLB\ CBRUB]) = [CBRLB\ CBRUB]$
WHERE:CBRLB = CABLE RANGE LOWER BOUNDRY & CBRUB=CABLE RANGE UPPER BOUNDRY

FIG. 4

20020804.0054

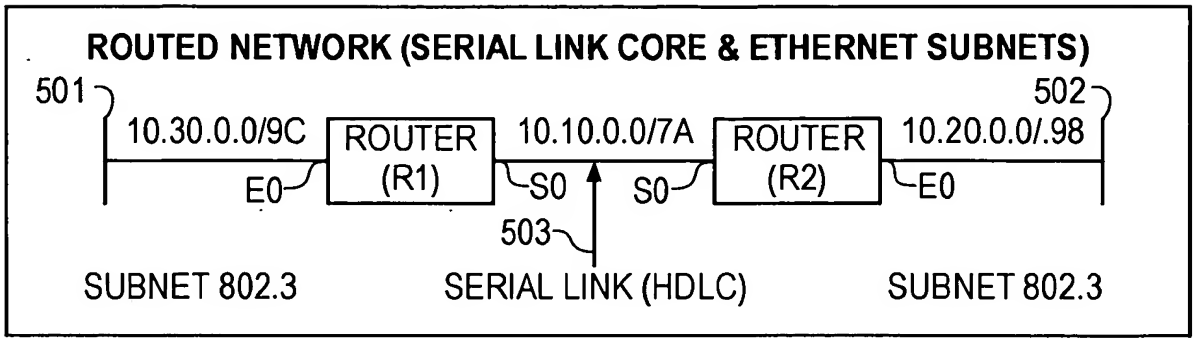


FIG. 5

10074805-020102

ROUTER R1:

```
VERSION 10.0
!
HOSTNAME R1
!
NOVELL ROUTING 0000.0C08.94DD
!
INTERFACE ETHERNET0 (602)
IP ADDRESS 10.30.7.2 255.255.0.0
IPX NETWORK 9C
!
INTERFACE SERIAL0 (601)
IP ADDRESS 10.10.4.1 255.255.0.0
IPX NETWORK 7A
BANDWIDTH 1000
!
ROUTER IGRP 109
NETWORK 10.0.0.0
!
```

FIG. 6A

ROUTER R2:

```
VERSION 10.0
!
HOSTNAME R2
!
NOVELL ROUTING 0000.0C04.3A3E
!
INTERFACE ETHERNET0
IP ADDRESS 10.20.5.2 255.255.0.0
IPX NETWORK 98
!
INTERFACE SERIAL0
IP ADDRESS 10.10.4.2 255.255.0.0
IPX NETWORK 7A
!
ROUTER IGRP 109
NETWORK 10.0.0.0
!
! STATIC ROUTE DEFINITION
IP 70.70.3.0 255.255.0.0 199.37.28.3
```

FIG. 6B

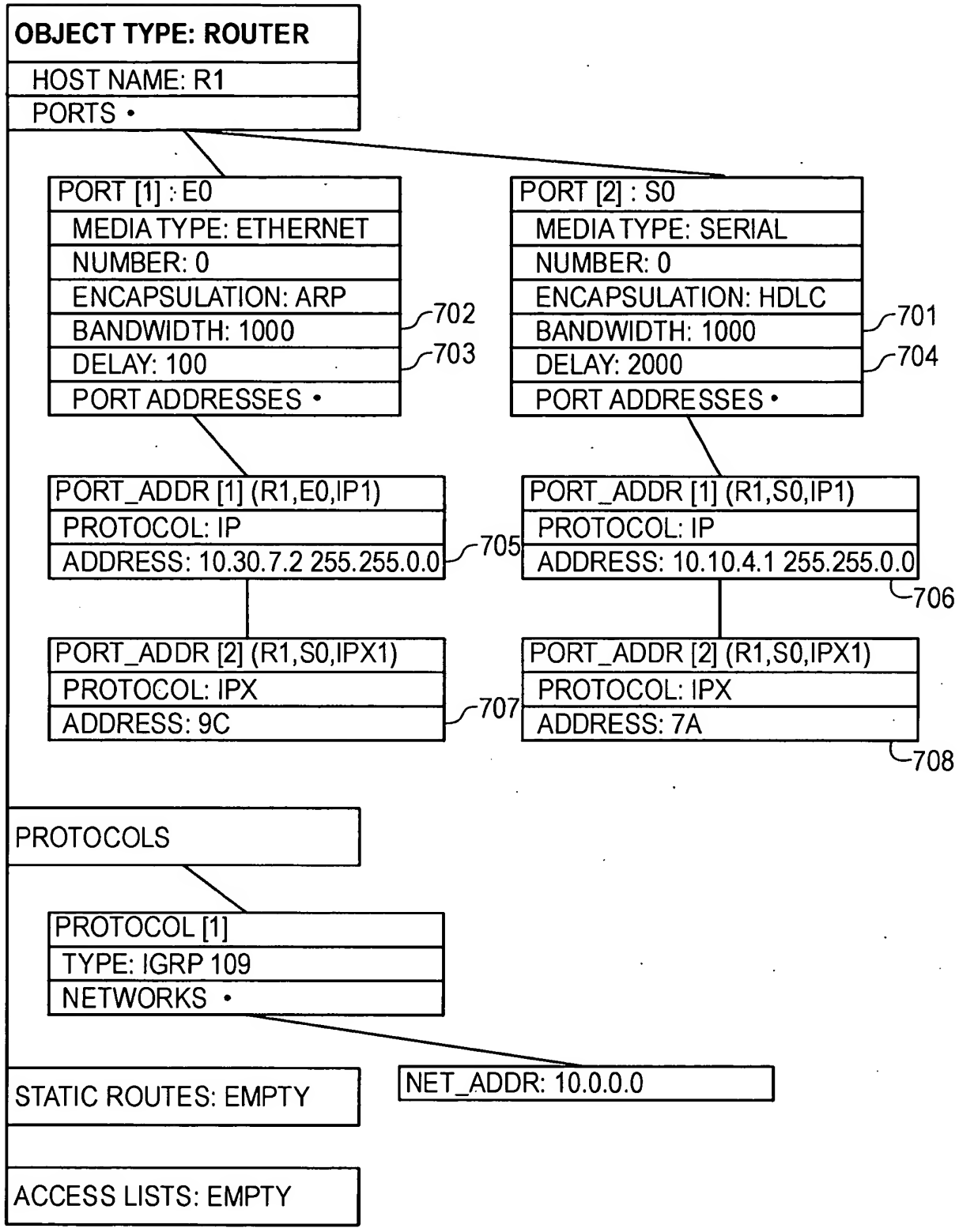

OBJECT TYPE: ROUTER
HOST NAME: R1
PORTS •
PORT [1] : E0
MEDIA TYPE: ETHERNET
NUMBER: 0
ENCAPSULATION: ARP
BANDWIDTH: 1000
DELAY: 100
PORT ADDRESSES •
PORT [2] : S0
MEDIA TYPE: SERIAL
NUMBER: 0
ENCAPSULATION: HDLC
BANDWIDTH: 1000
DELAY: 2000
PORT ADDRESSES •
702
703
701
704
PORT_ADDR [1] (R1,E0,IP1)
PROTOCOL: IP
ADDRESS: 10.30.7.2 255.255.0.0
PORT_ADDR [1] (R1,S0,IP1)
PROTOCOL: IP
ADDRESS: 10.10.4.1 255.255.0.0
705
706
PORT_ADDR [2] (R1,S0,IPX1)
PROTOCOL: IPX
ADDRESS: 9C
PORT_ADDR [2] (R1,S0,IPX1)
PROTOCOL: IPX
ADDRESS: 7A
707
708
PROTOCOLS
PROTOCOL [1]
TYPE: IGRP 109
NETWORKS •
NET_ADDR: 10.0.0.0
STATIC ROUTES: EMPTY
ACCESS LISTS: EMPTY

FIG. 7A

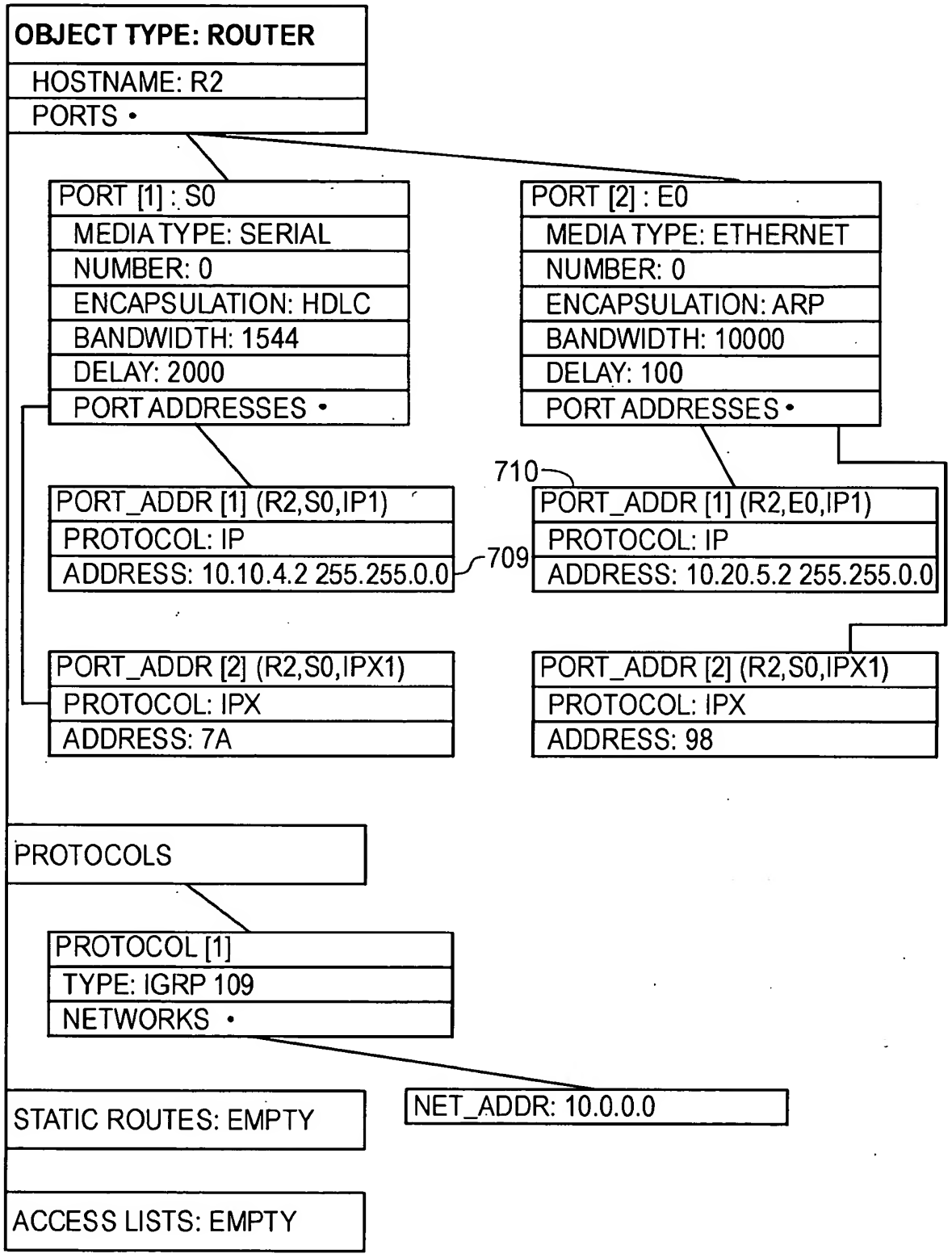


FIG. 7B

10074805 - 062606

OBJECT TYPE: SPT
PROTOCOL: IP
CONNS: [EMPTY]

FIG. 8A

OBJECT TYPE: SPT
PROTOCOL: IP
CONNS:

OBJECT TYPE: CONN[1]
SUBNET: 10.30.0.0
POINTERS: [EMPTY]

FIG. 8B

OBJECT TYPE: SPT
PROTOCOL: IP
CONNS:

OBJECT TYPE: CONN[1]
SUBNET: 10.30.0.0
POINTERS:

POINTER
R1,E0,IP1

FIG. 8C

401-1 INITIALIZED SPT SET TO EMPTY

402-1 PA ASSIGNED 10.30.7.2 255.255.0.0

403-1 ($SUBNET_P$(PA))= 10.30.0.0 AND IS NOT IN SPT

405-1 FIRST 'CONNECTION' ($SUBNET_P$(PA)) ADDED TO SPT_{IP}

404-1 POINTER TO PA (R1,E0,IP1) ADDED UNDER SUBNET 10.30.0.0 IN SPT_{IP}

10074805.052502

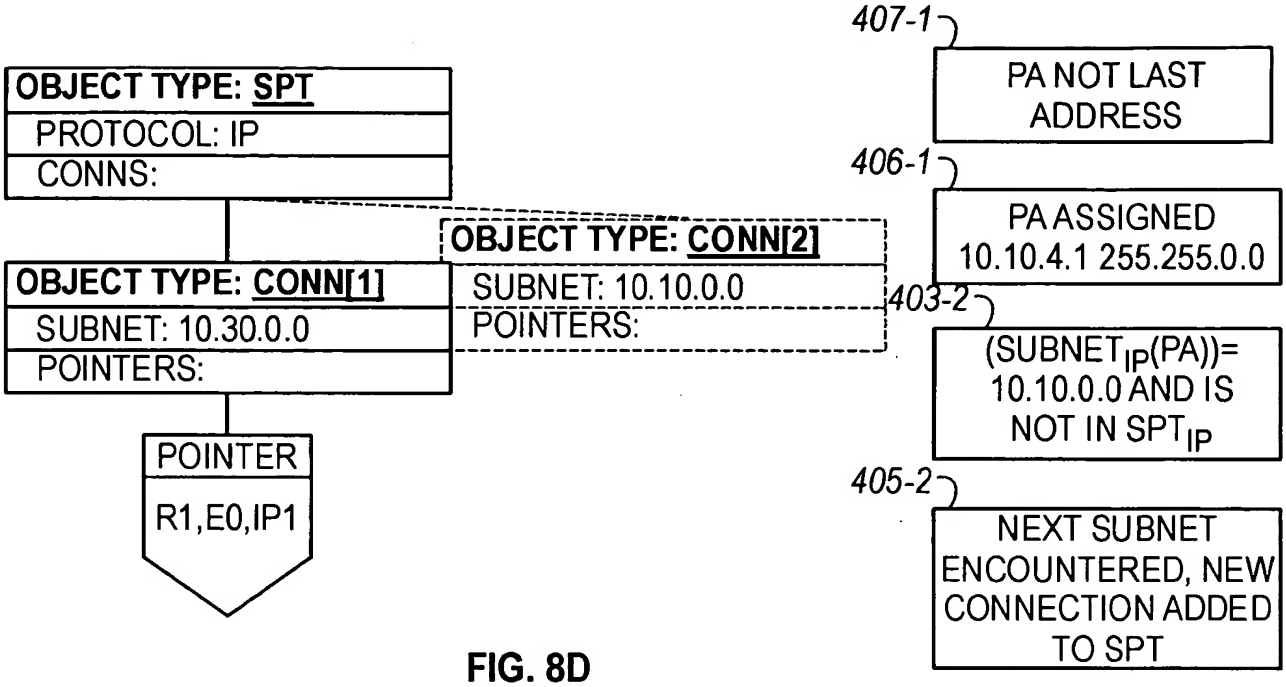


FIG. 8D

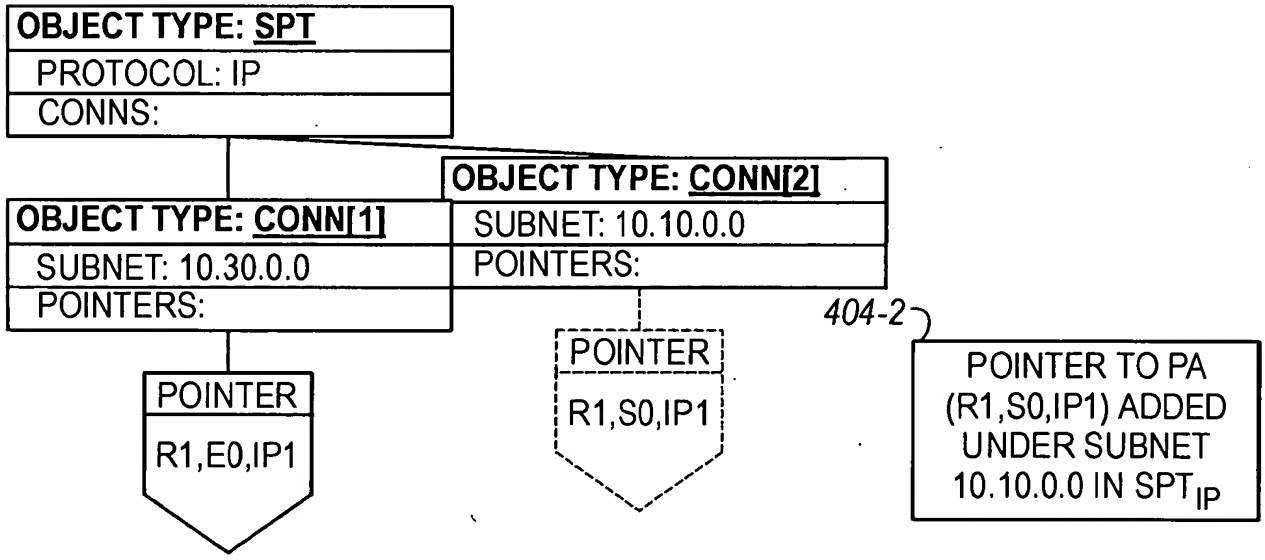


FIG. 8E

Express Mail Label No. EL652871260US

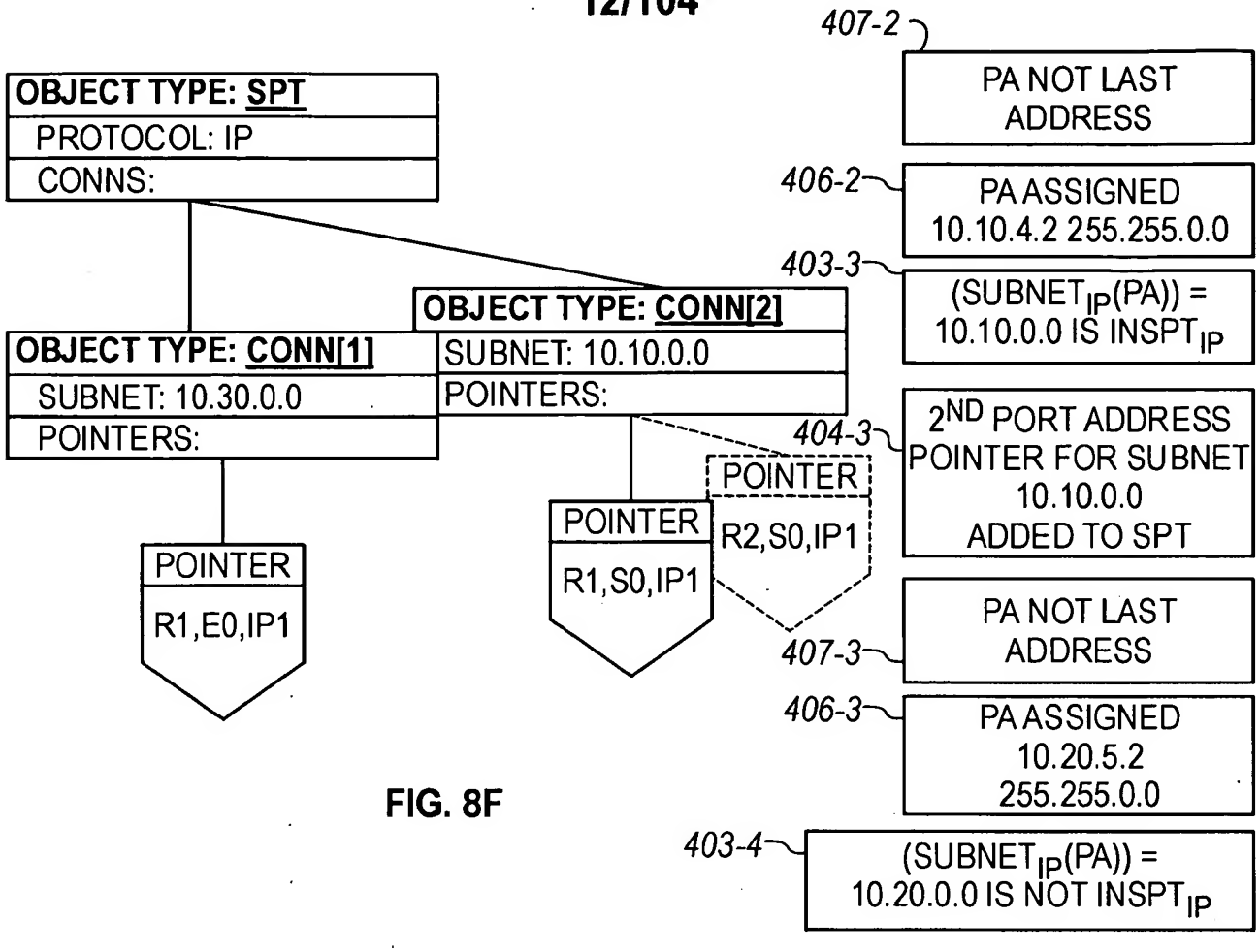


FIG. 8F

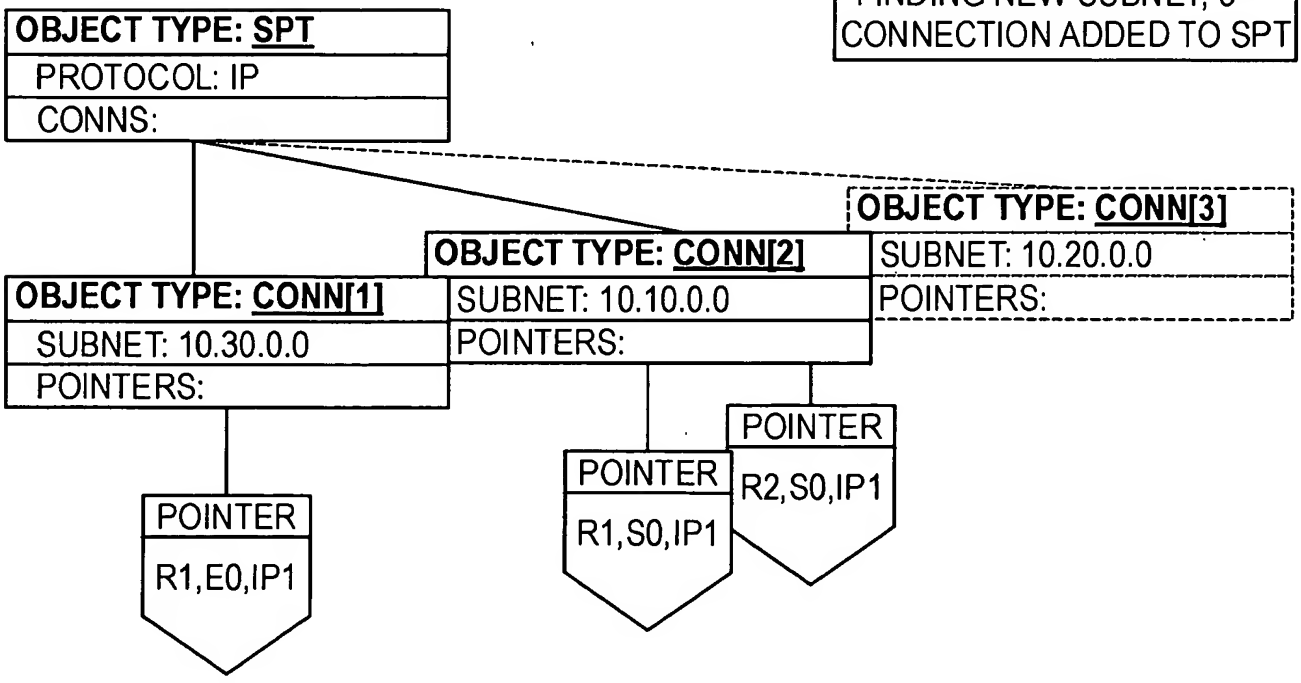


FIG. 8G

1007480.02130

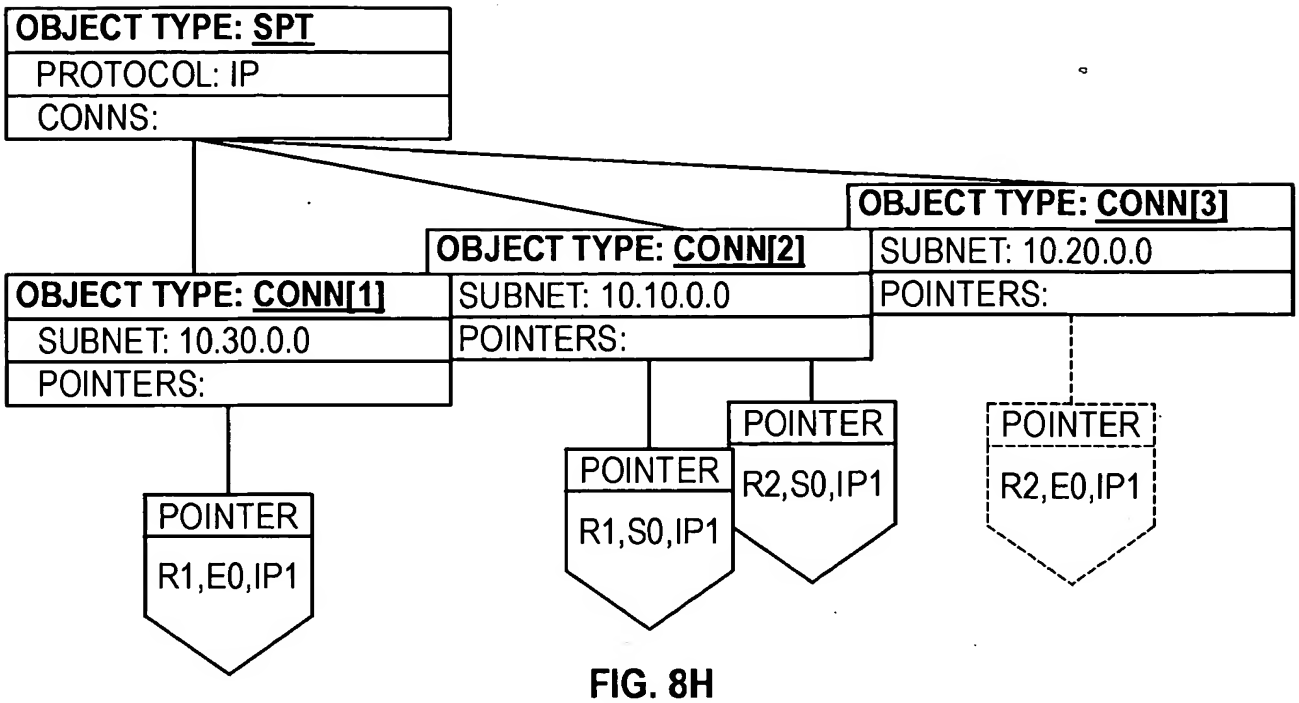


FIG. 8H

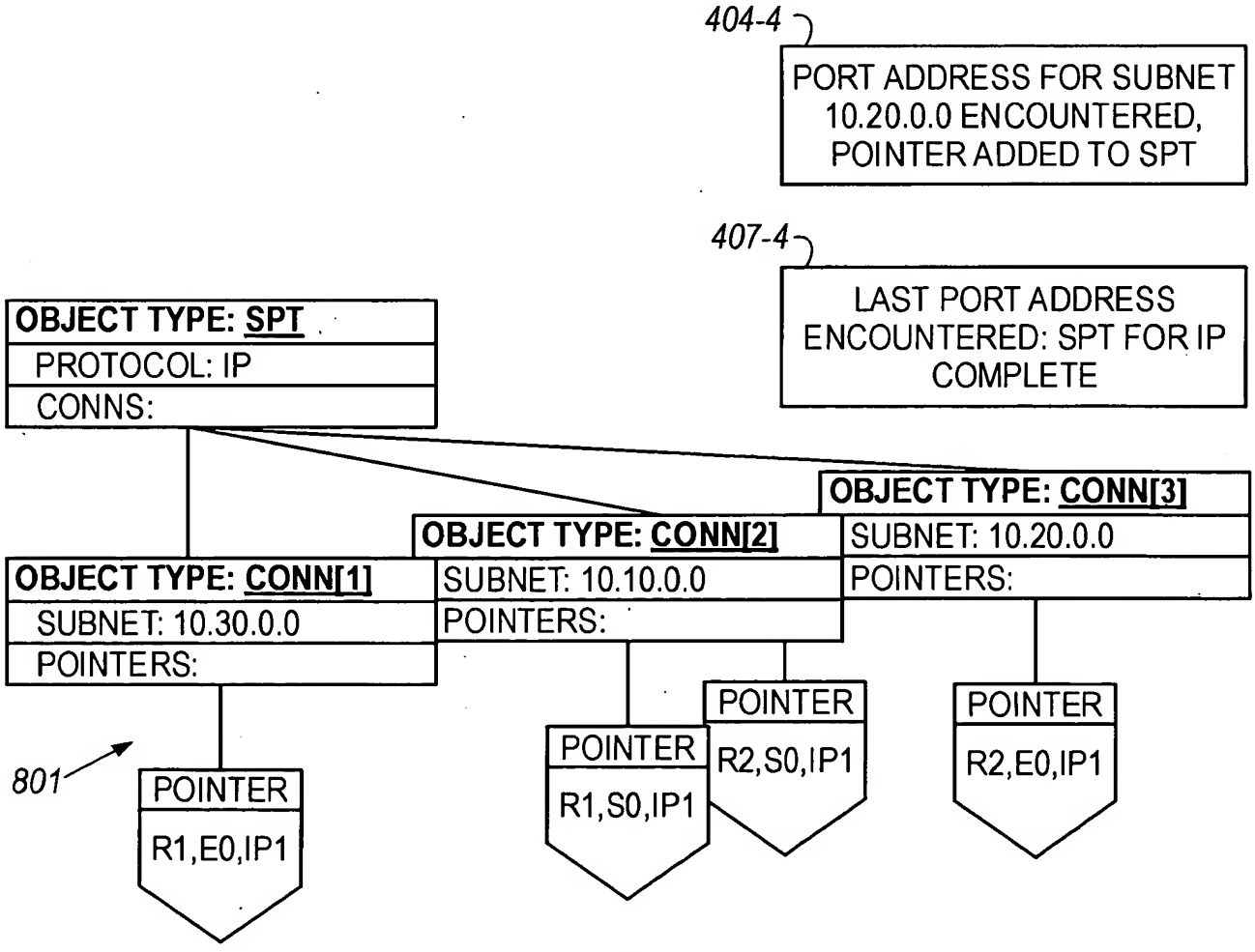


FIG. 8I

20120205.0934.0001

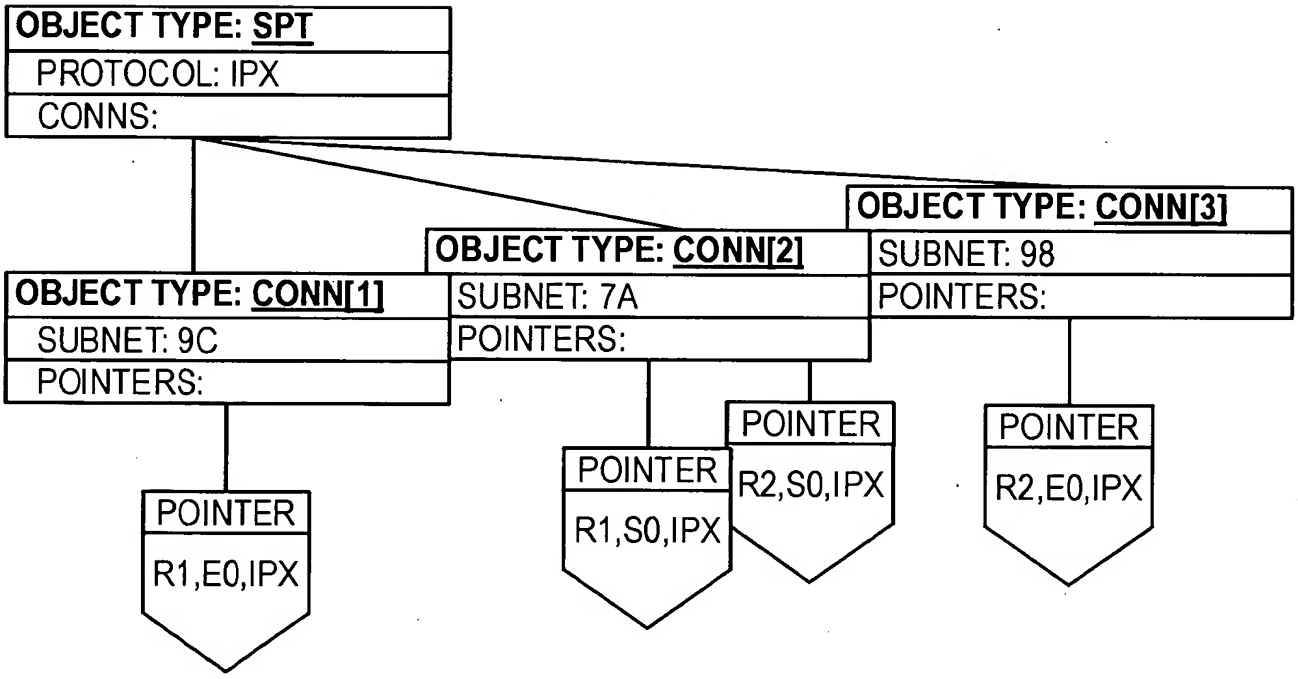

OBJECT TYPE: SPT
PROTOCOL: IPX
CONNS:
OBJECT TYPE: CONN[1]
SUBNET: 9C
POINTERS:
OBJECT TYPE: CONN[2]
SUBNET: 7A
POINTERS:
OBJECT TYPE: CONN[3]
SUBNET: 98
POINTERS:
POINTER
R1,E0,IPX
POINTER
R1,S0,IPX
POINTER
R2,S0,IPX
POINTER
R2,E0,IPX

FIG. 8J

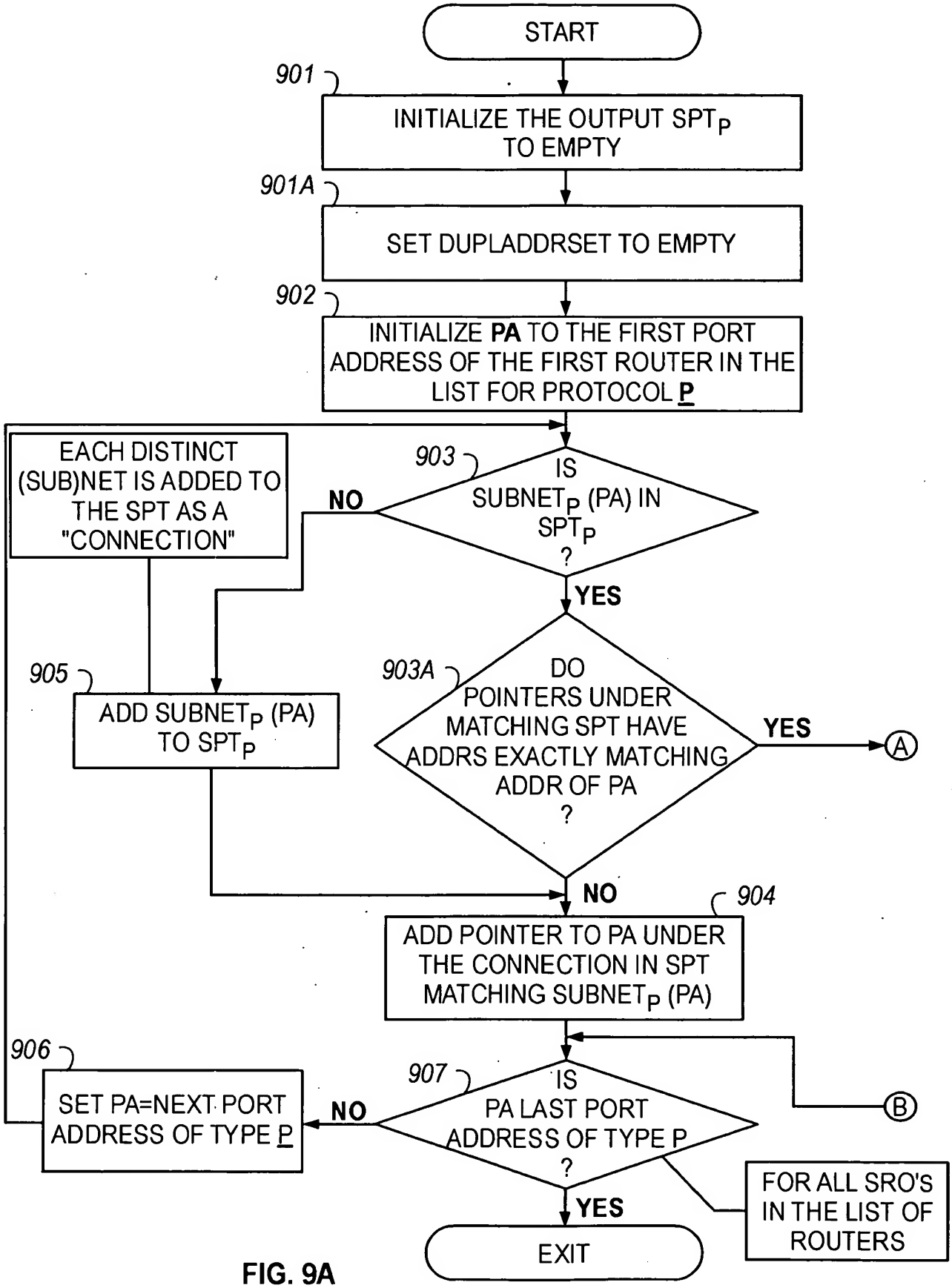

START
901
INITIALIZE THE OUTPUT SPT$_P$ TO EMPTY
901A
SET DUPLADDRSET TO EMPTY
902
INITIALIZE **PA** TO THE FIRST PORT ADDRESS OF THE FIRST ROUTER IN THE LIST FOR PROTOCOL **P**
903
IS SUBNET$_P$ (PA) IN SPT$_P$?
NO
YES
EACH DISTINCT (SUB)NET IS ADDED TO THE SPT AS A "CONNECTION"
905
ADD SUBNET$_P$ (PA) TO SPT$_P$
903A
DO POINTERS UNDER MATCHING SPT HAVE ADDRS EXACTLY MATCHING ADDR OF PA ?
YES
A
NO
904
ADD POINTER TO PA UNDER THE CONNECTION IN SPT MATCHING SUBNET$_P$ (PA)
906
SET PA=NEXT PORT ADDRESS OF TYPE P
907
IS PA LAST PORT ADDRESS OF TYPE P ?
NO
B
YES
FOR ALL SRO'S IN THE LIST OF ROUTERS
EXIT

FIG. 9A

NOTE
AS REFERRED TO IN THIS FLOWCHART THE TERM "DUPLADDRSET" CONNOTES A SET OF PORT ADDRESS SETS THAT CAPTURE THE PORT ADDRESSES THAT EXACTLY MATCH.
FOR EXAMPLE { {PA1, PA3, PA4} {PA9, PA7}} MEANS PA1, PA3, & PA4 ALL REFER TO THE EXACT SAME ADDRESS AND PA9 & PA7 REFER TO EXACTLY THE SAME ADDRESS

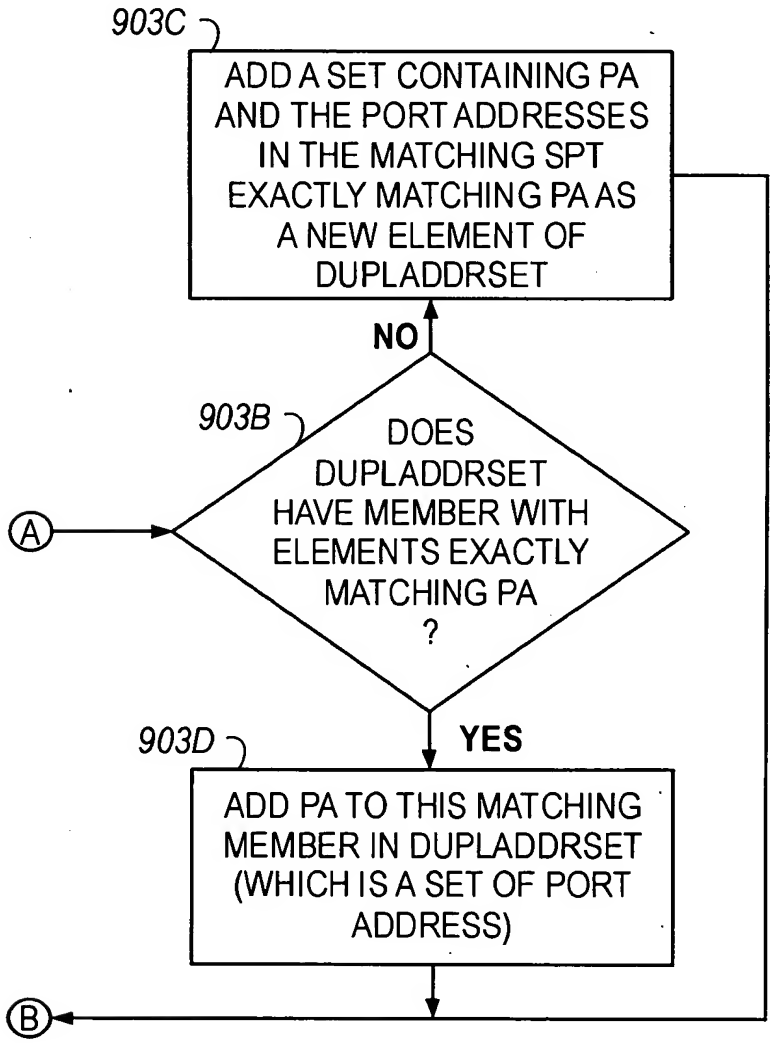


FIG. 9B

DOCKET NO. 50325-0630

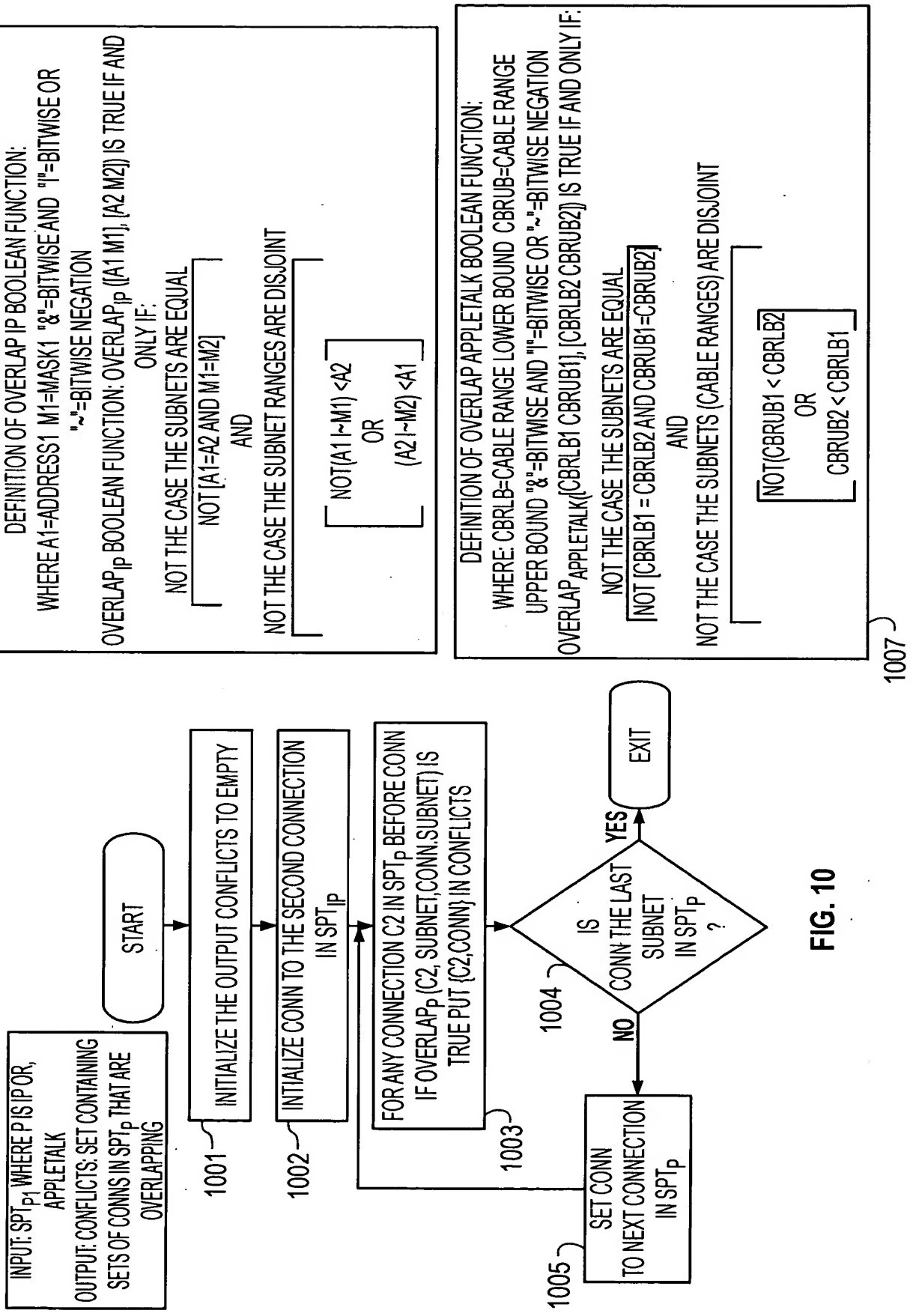

INPUT: SPT_{P1} WHERE P IS IP OR, APPLETALK
OUTPUT: CONFLICTS: SET CONTAINING SETS OF CONNS IN SPT_P THAT ARE OVERLAPPING
START
1001
INITIALIZE THE OUTPUT CONFLICTS TO EMPTY
1002
INITIALIZE CONN TO THE SECOND CONNECTION IN SPT_{IP}
1003
FOR ANY CONNECTION C2 IN SPT_P BEFORE CONN IF $OVERLAP_P$ (C2, SUBNET,CONN.SUBNET) IS TRUE PUT {C2,CONN} IN CONFLICTS
1004
IS CONN THE LAST SUBNET IN SPT_P ?
YES
EXIT
NO
1005
SET CONN TO NEXT CONNECTION IN SPT_P
1006
DEFINITION OF OVERLAP IP BOOLEAN FUNCTION:
WHERE A1=ADDRESS1 M1=MASK1 "&"=BITWISE AND "|"=BITWISE OR "~"=BITWISE NEGATION
$OVERLAP_{IP}$ BOOLEAN FUNCTION: $OVERLAP_{IP}$ ((A1 M1), (A2 M2)) IS TRUE IF AND ONLY IF:
NOT THE CASE THE SUBNETS ARE EQUAL
NOT (A1=A2 AND M1=M2)
AND
NOT THE CASE THE SUBNET RANGES ARE DISJOINT
NOT(A1 |~M1) <A2
OR
(A2 |~M2) <A1
1007
DEFINITION OF OVERLAP APPLETALK BOOLEAN FUNCTION:
WHERE: CBRLB=CABLE RANGE LOWER BOUND CBRUB=CABLE RANGE UPPER BOUND "&"=BITWISE AND "|"=BITWISE OR "~"=BITWISE NEGATION
$OVERLAP_{APPLETALK}$((CBRLB1 CBRUB1), (CBRLB2 CBRUB2)) IS TRUE IF AND ONLY IF:
NOT THE CASE THE SUBNETS ARE EQUAL
NOT (CBRLB1 = CBRLB2 AND CBRUB1=CBRUB2)
AND
NOT THE CASE THE SUBNETS (CABLE RANGES) ARE DISJOINT
NOT(CBRUB1 < CBRLB2
OR
CBRUB2 < CBRLB1

FIG. 10

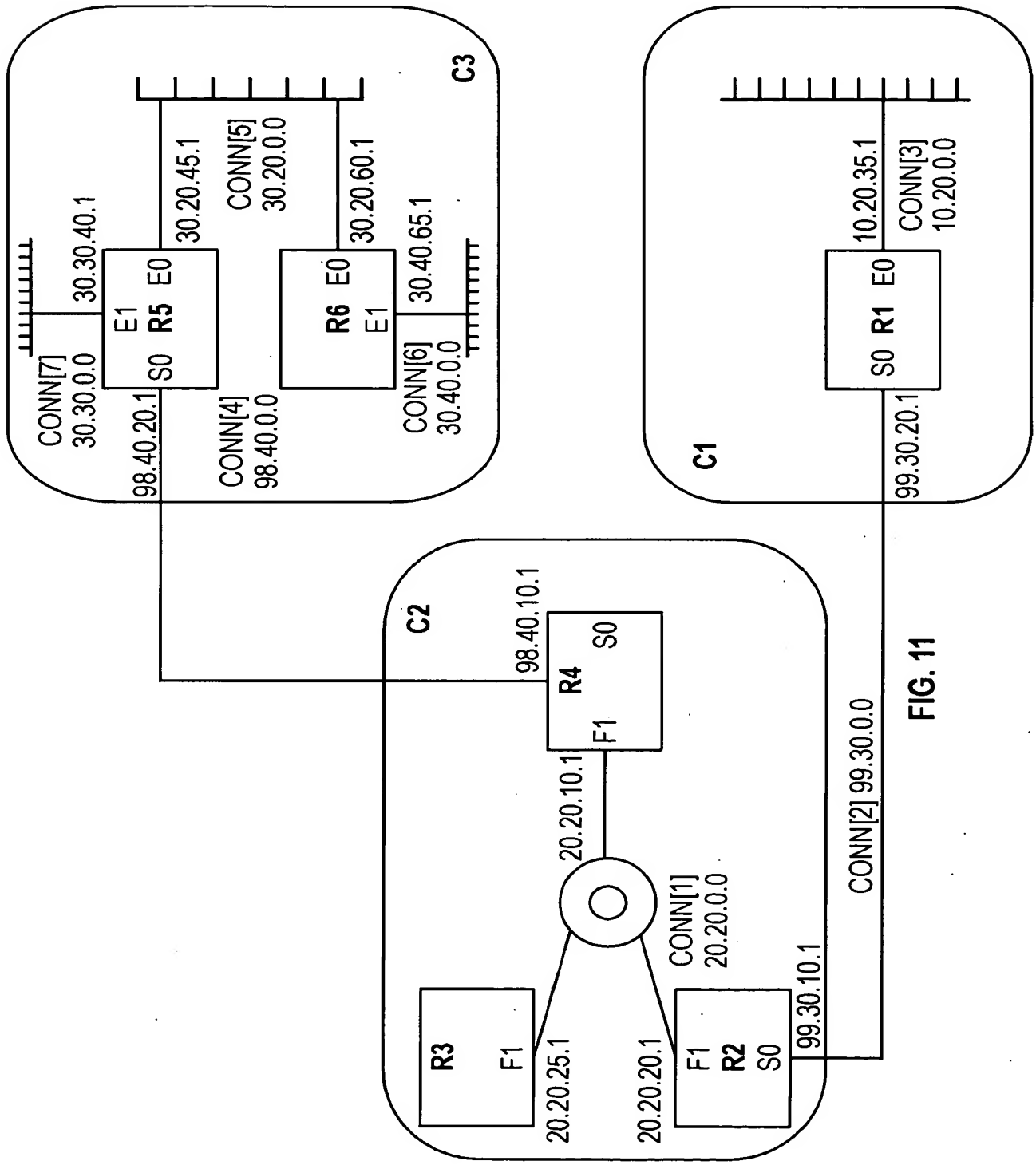


FIG. 11

20120-5084.00T

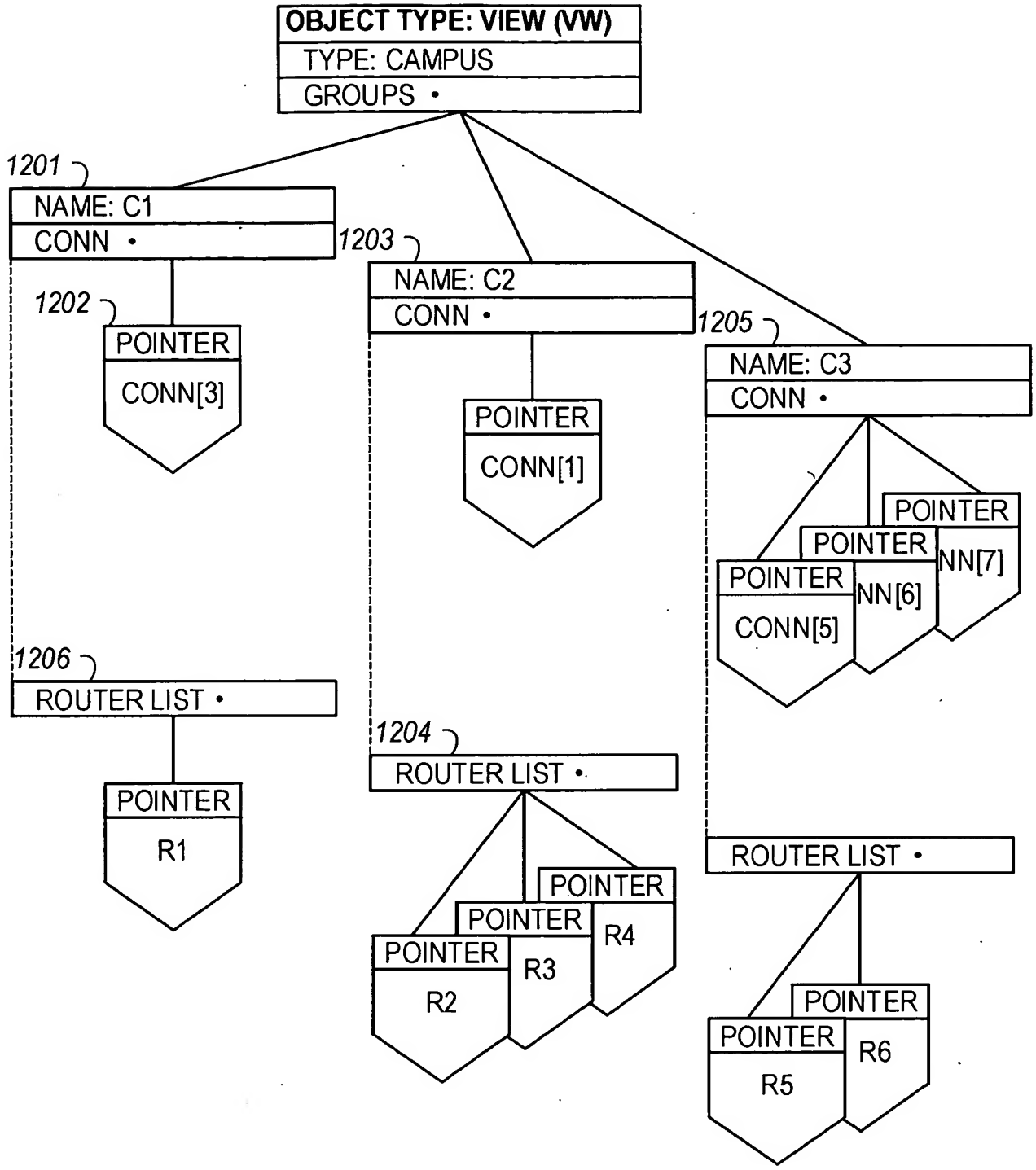


FIG. 12

EL652871260US

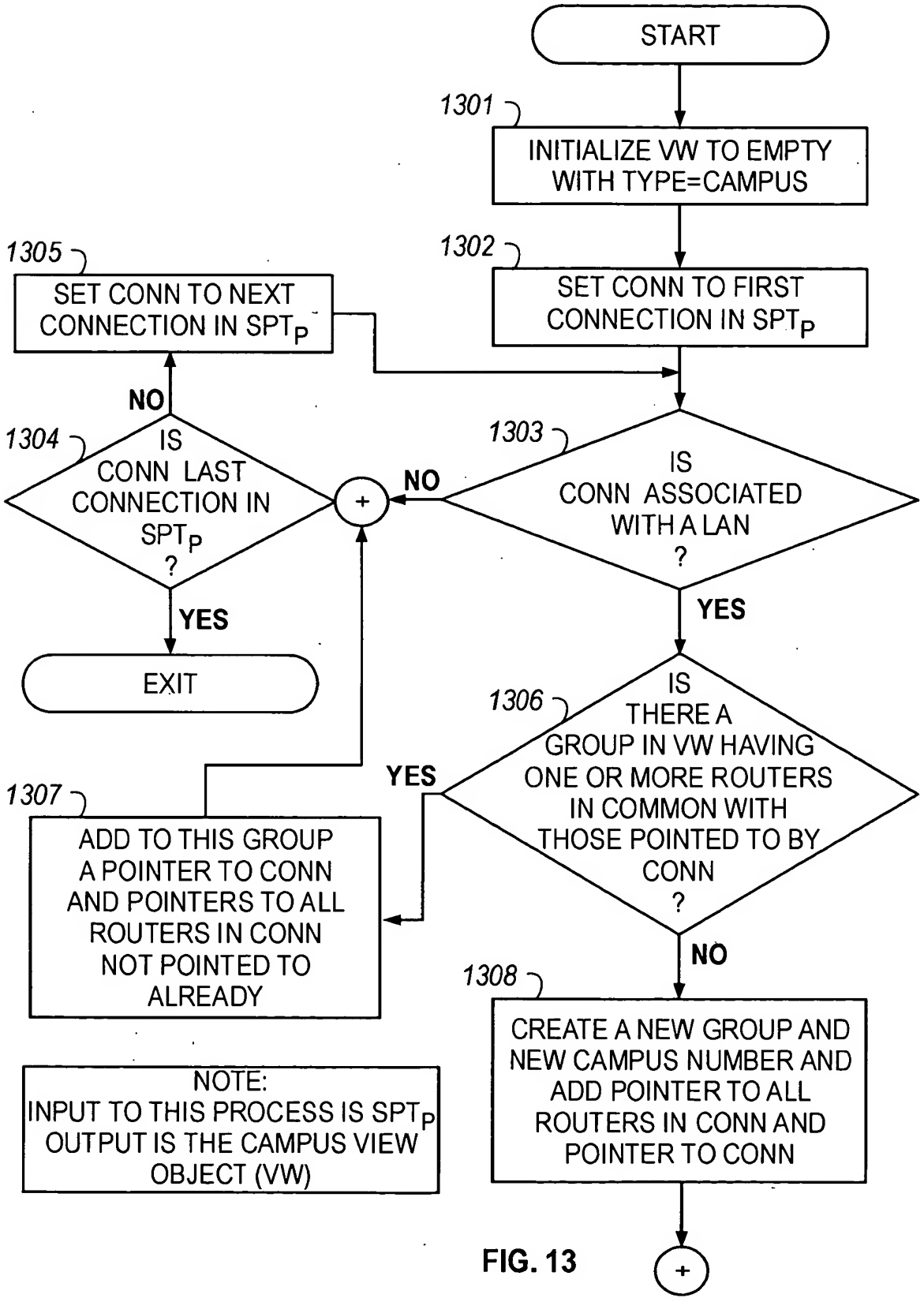


FIG. 13

1009480505.020202

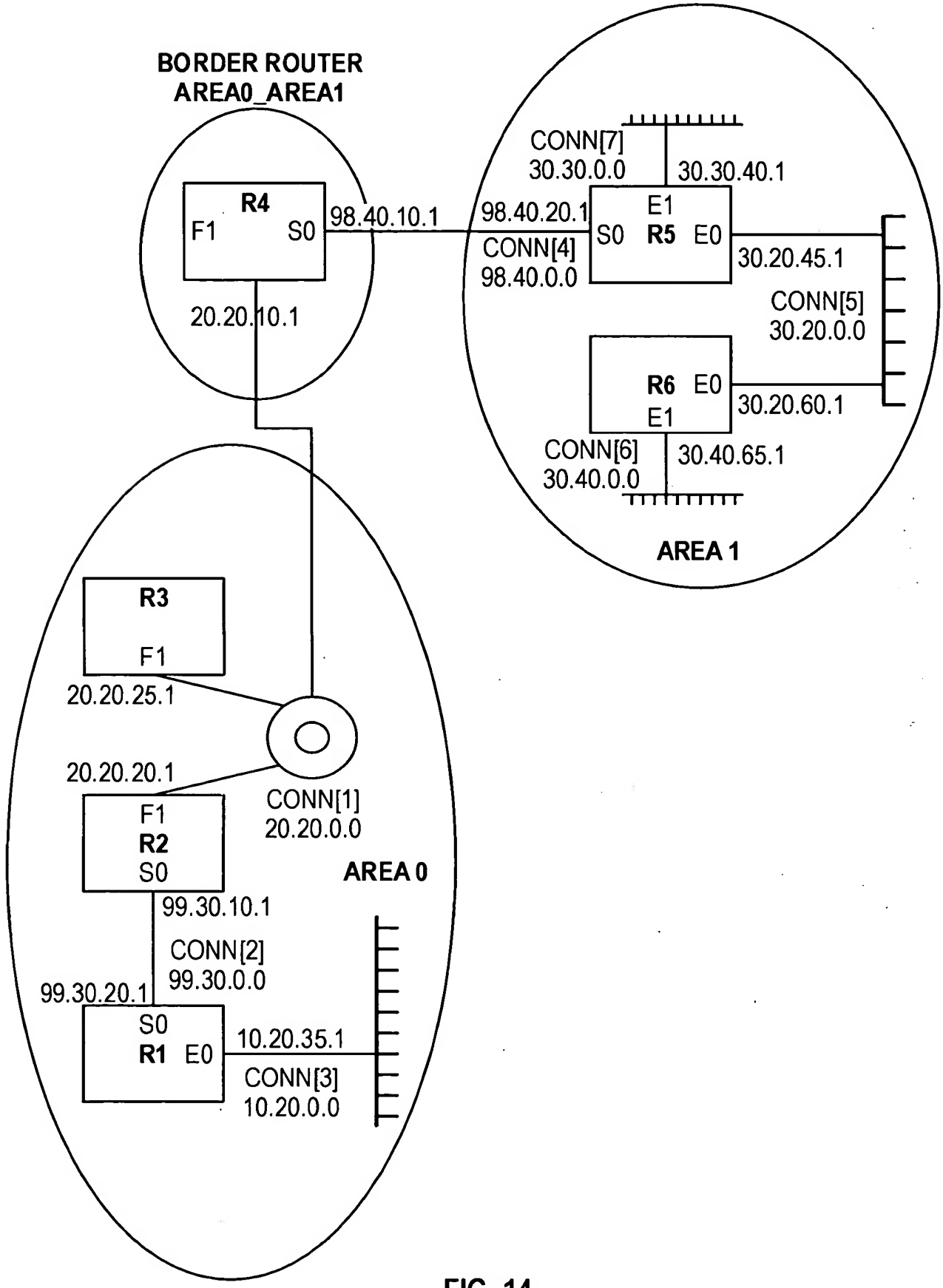


FIG. 14

Express Mail Label No. EL652871260US

20020524-050704

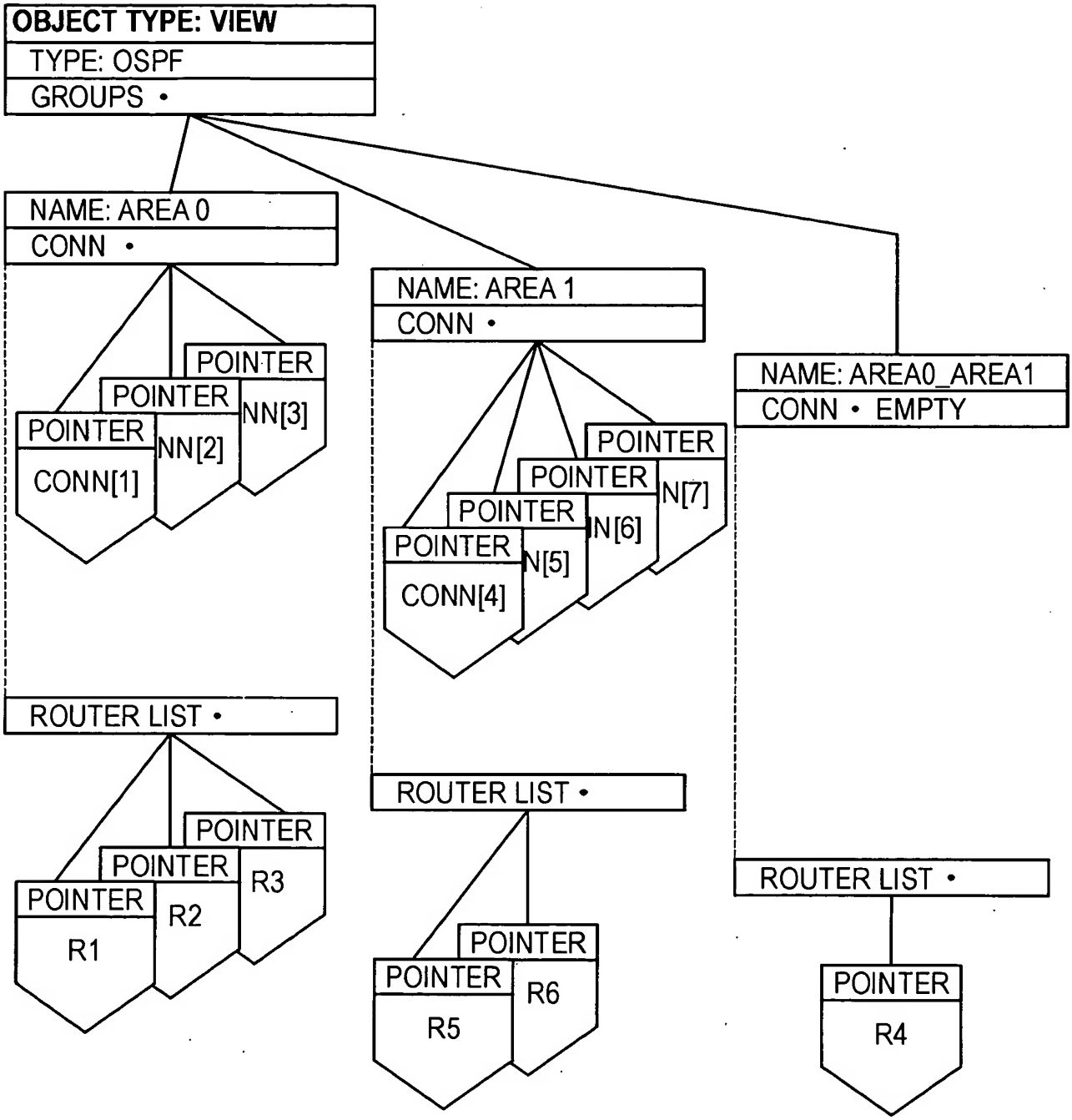


FIG. 15

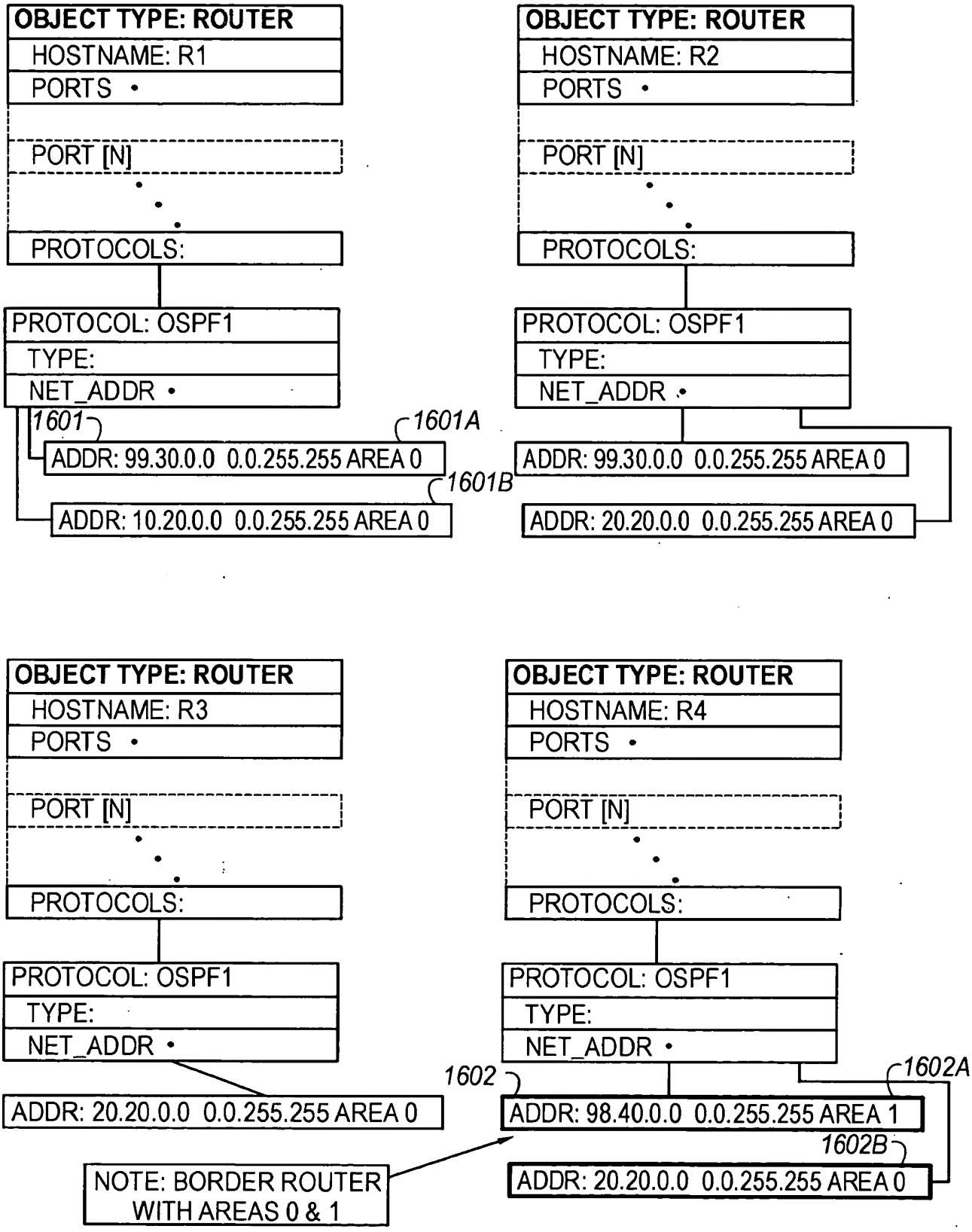


FIG. 16A

10025405-020204

EL652871260US

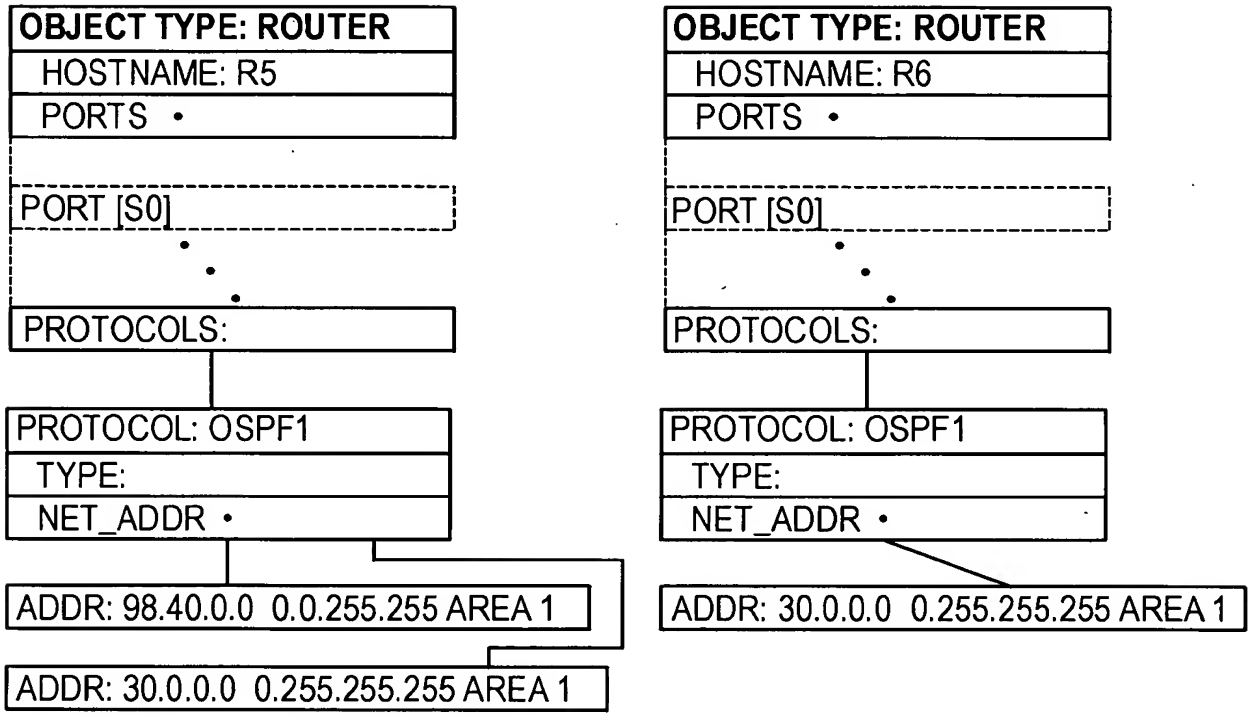


FIG. 16B

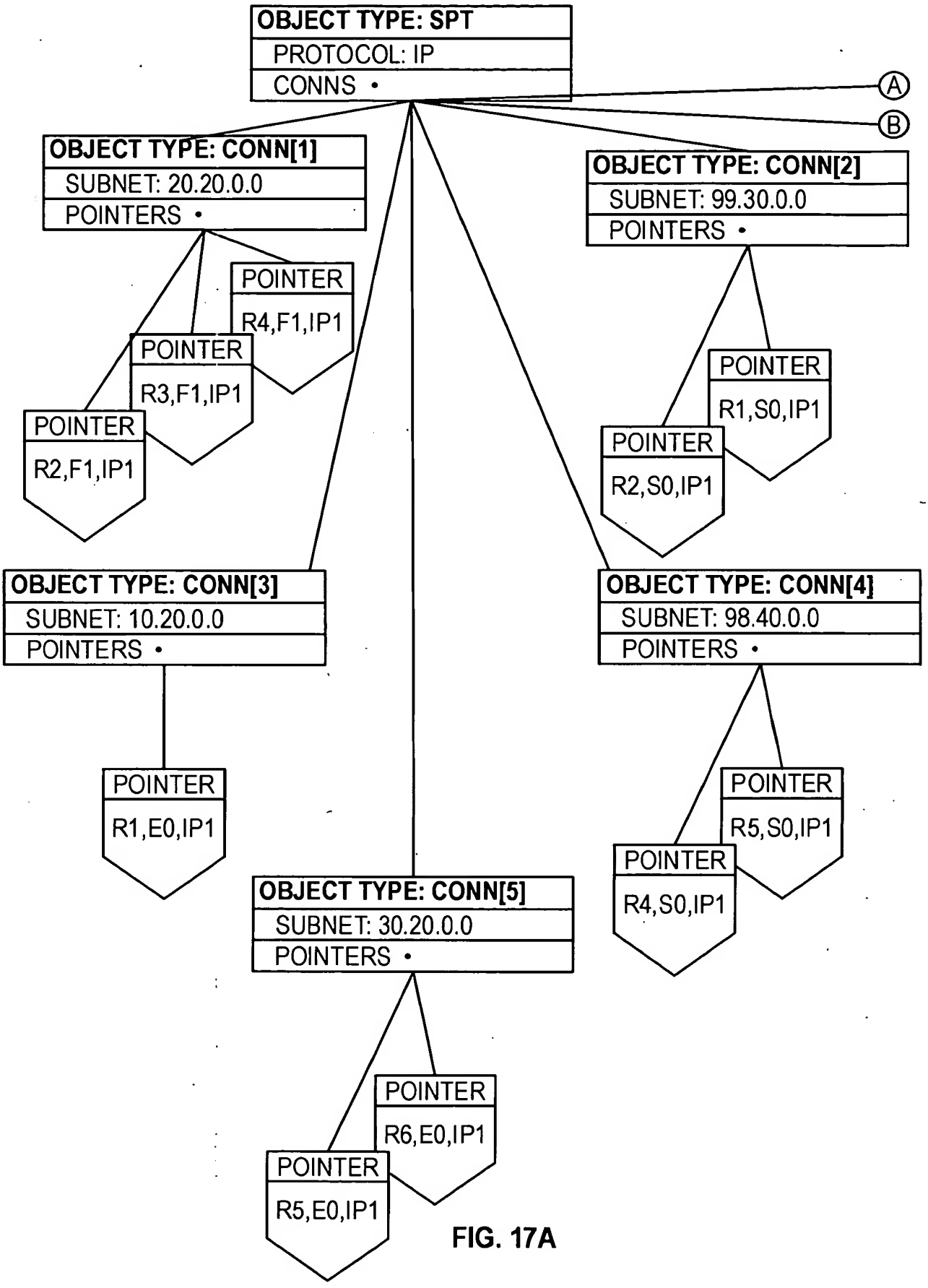


FIG. 17A

20020524-50894v001

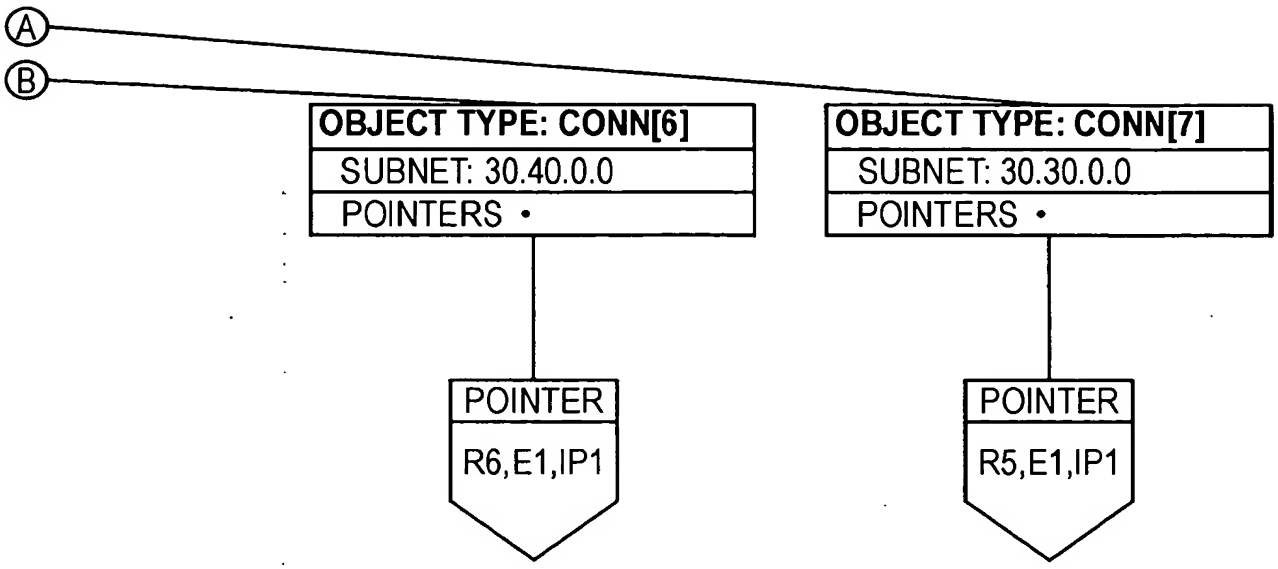


FIG. 17B

EL652871260US

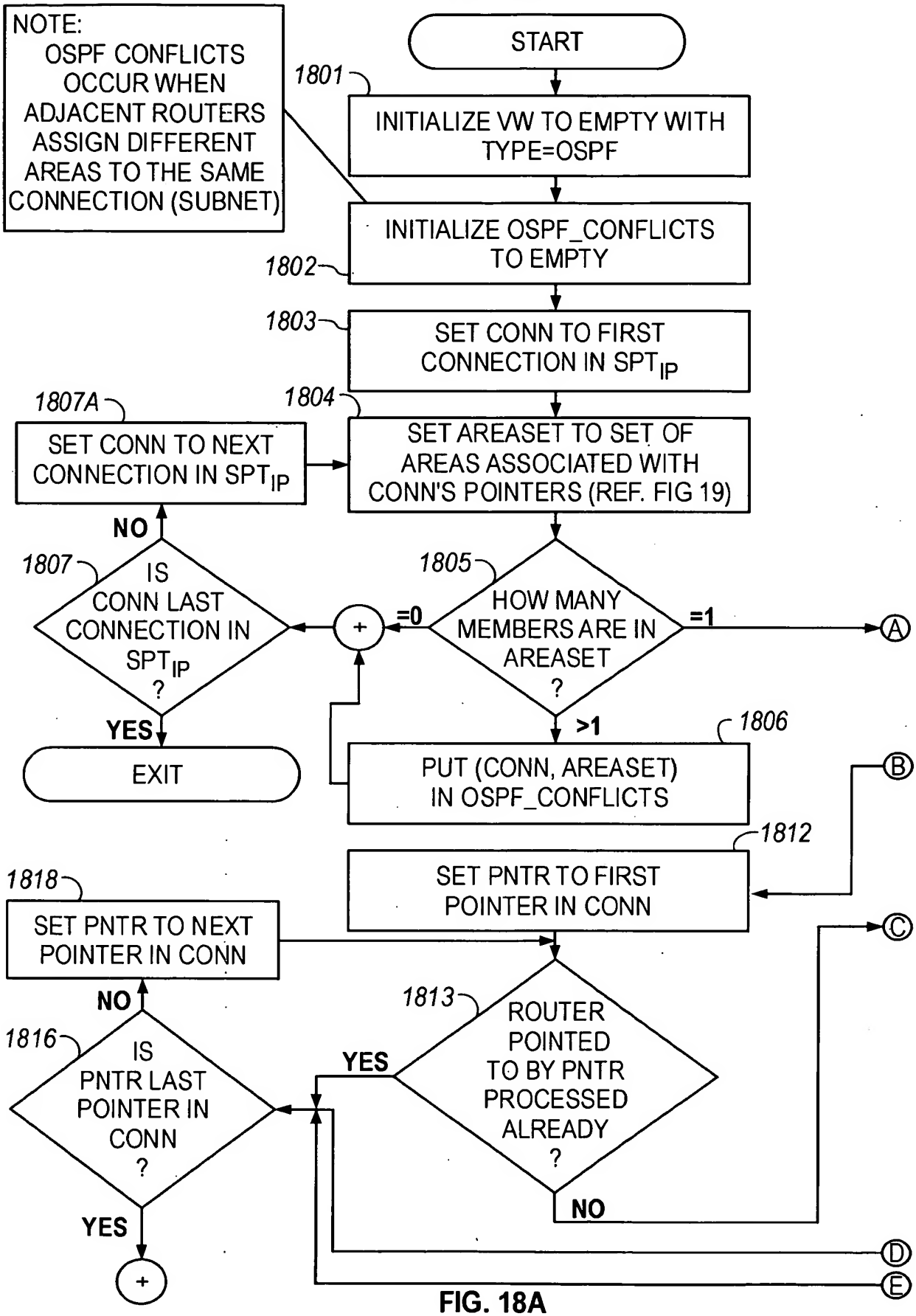

NOTE:
OSPF CONFLICTS OCCUR WHEN ADJACENT ROUTERS ASSIGN DIFFERENT AREAS TO THE SAME CONNECTION (SUBNET)
START
1801
INITIALIZE VW TO EMPTY WITH TYPE=OSPF
INITIALIZE OSPF_CONFLICTS TO EMPTY
1802
1803
SET CONN TO FIRST CONNECTION IN SPT_IP
1804
SET AREASET TO SET OF AREAS ASSOCIATED WITH CONN'S POINTERS (REF. FIG 19)
1805
HOW MANY MEMBERS ARE IN AREASET ?
=0
=1
>1
A
1806
PUT (CONN, AREASET) IN OSPF_CONFLICTS
1807A
SET CONN TO NEXT CONNECTION IN SPT_IP
NO
1807
IS CONN LAST CONNECTION IN SPT_IP ?
YES
EXIT
+
B
1812
SET PNTR TO FIRST POINTER IN CONN
1818
SET PNTR TO NEXT POINTER IN CONN
C
1813
ROUTER POINTED TO BY PNTR PROCESSED ALREADY ?
YES
NO
1816
IS PNTR LAST POINTER IN CONN ?
NO
YES
+
D
E

FIG. 18A

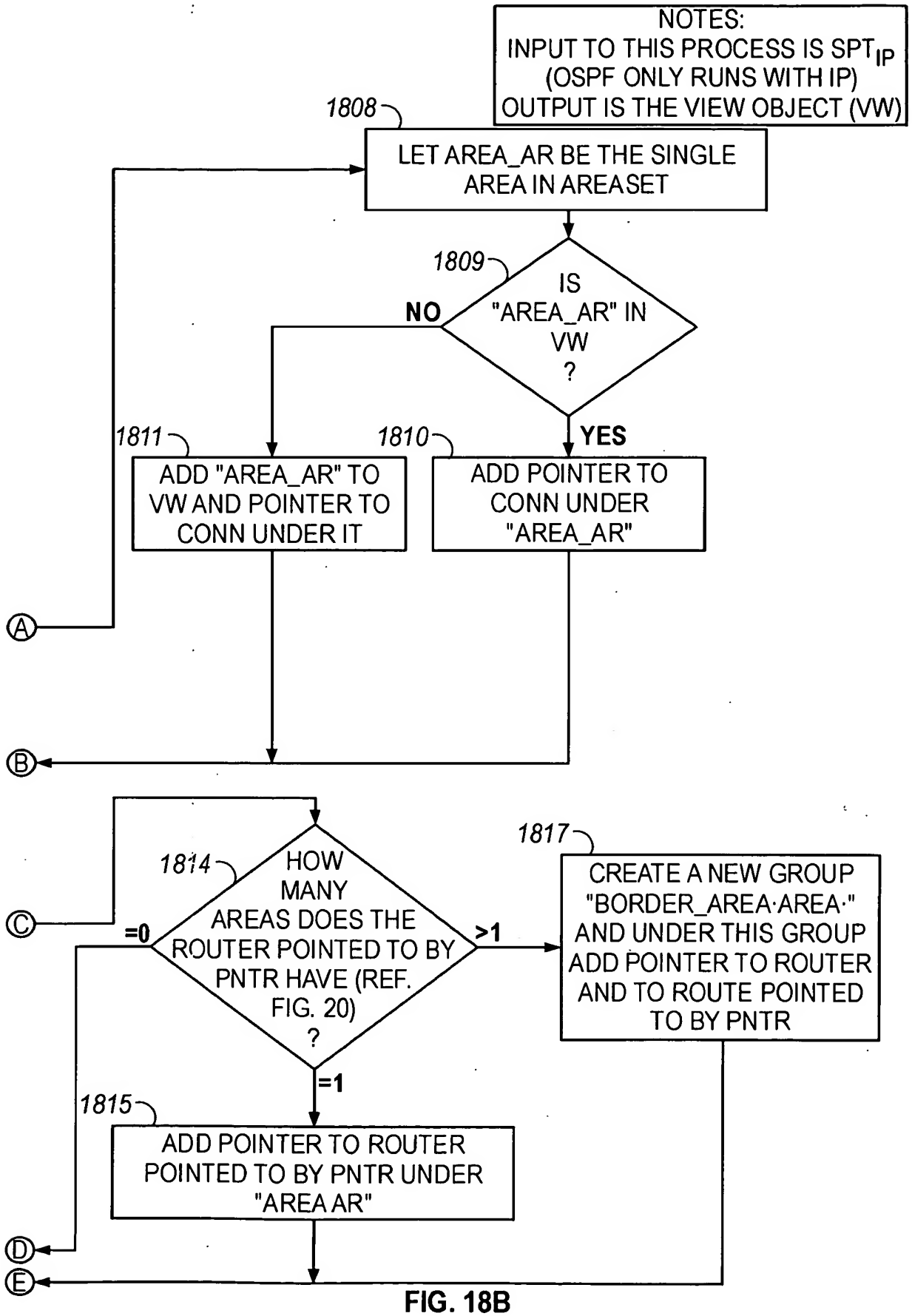


FIG. 18B

EXPRESS MAIL NO. EL652871260U

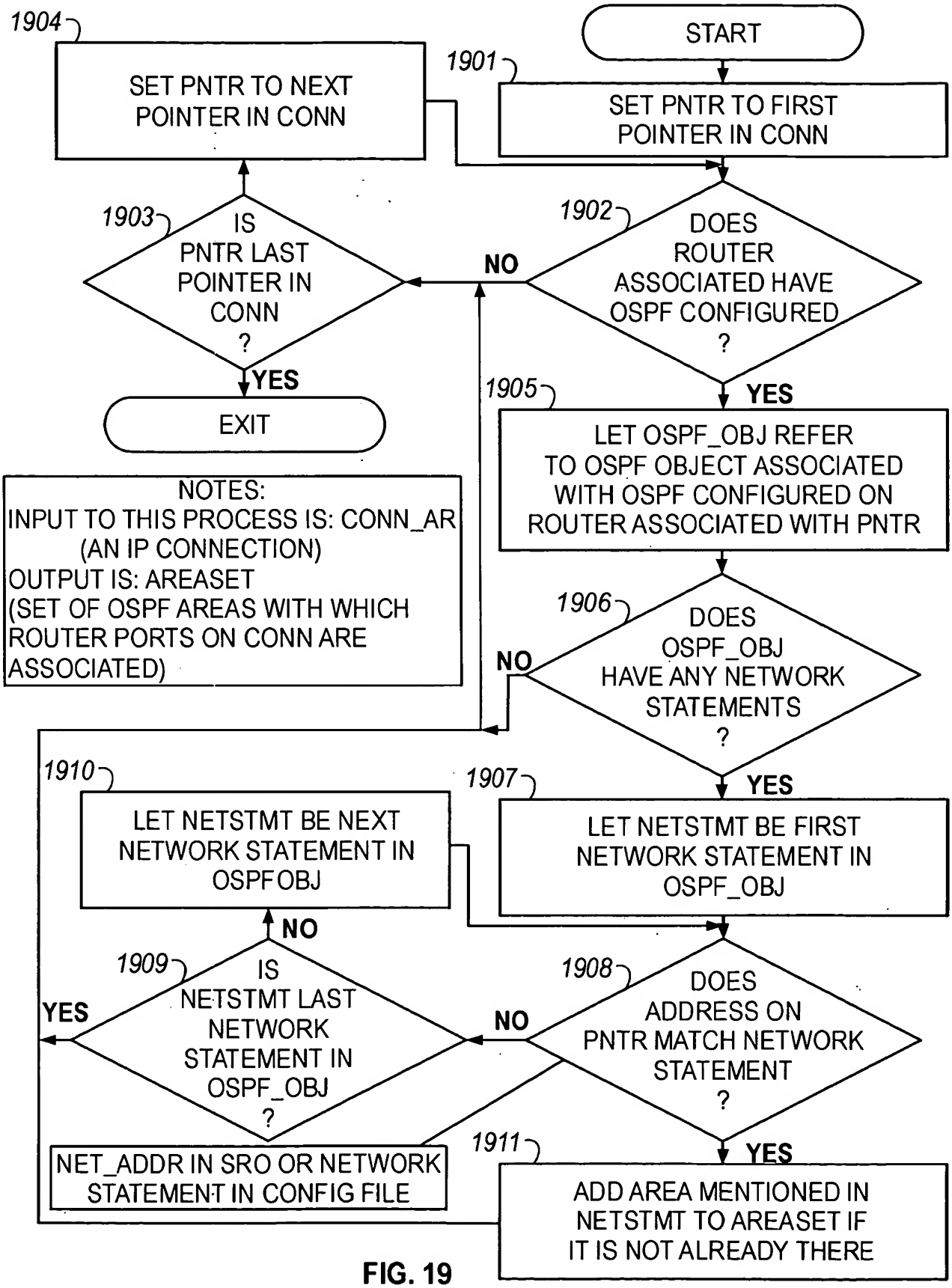


FIG. 19

10574805.022202

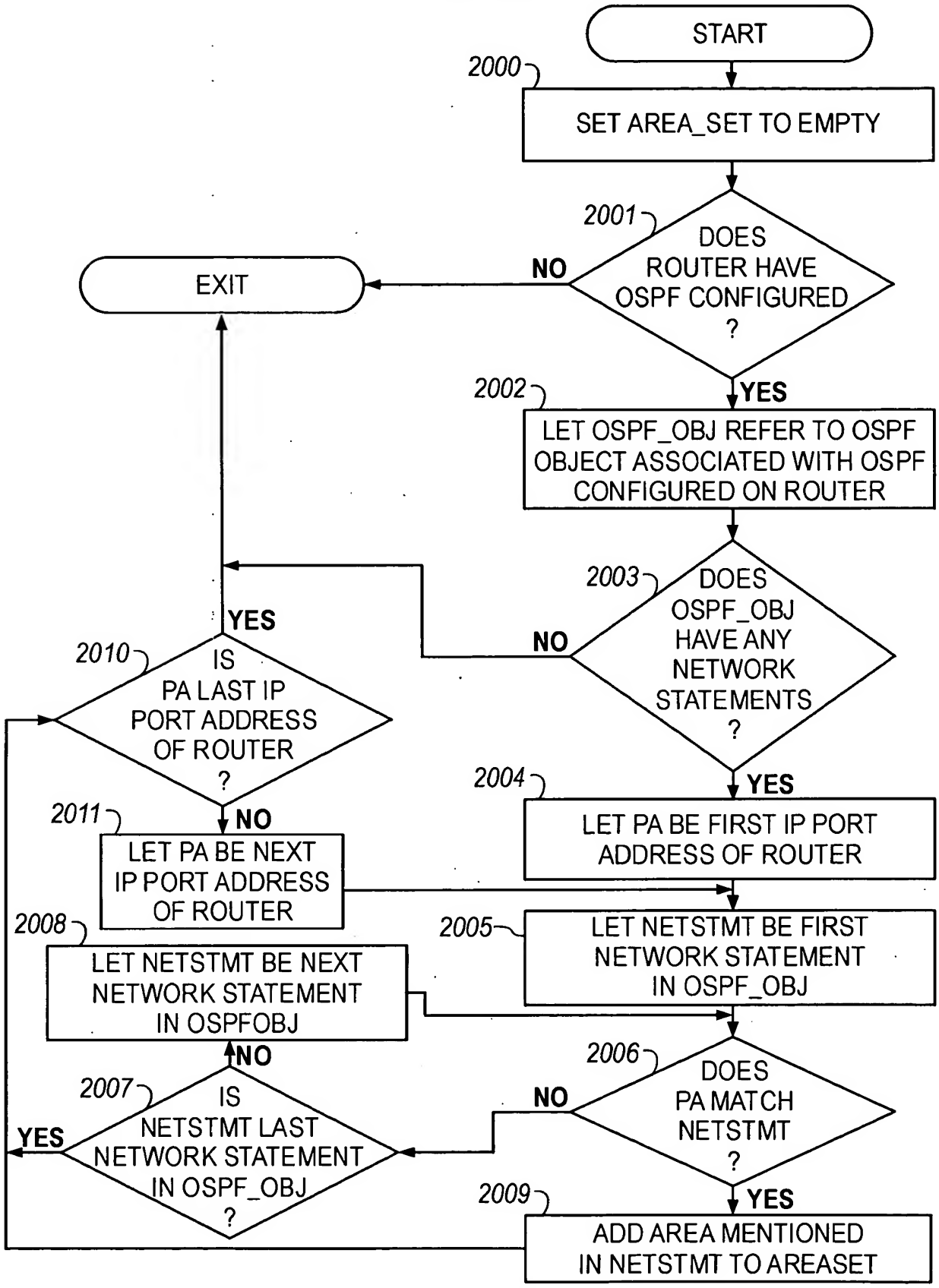


FIG. 20

10074805 - 020402

EL652871260US

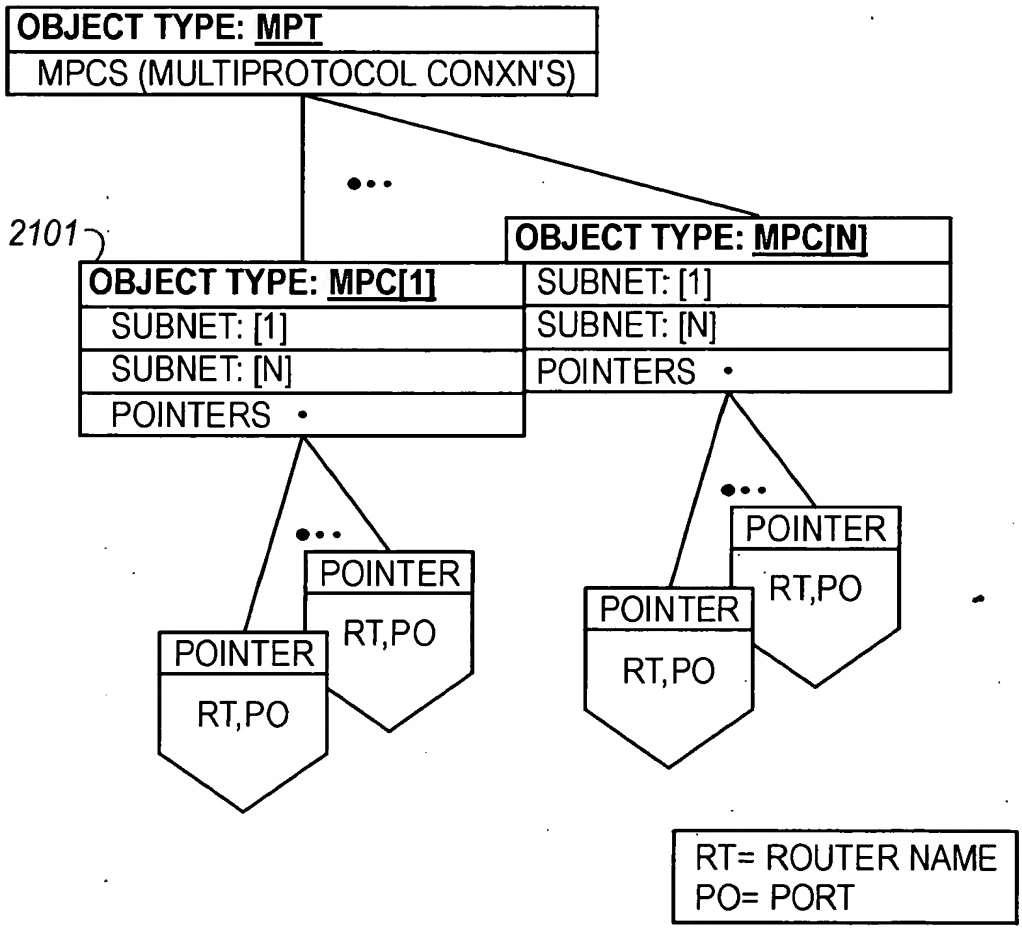


FIG. 21

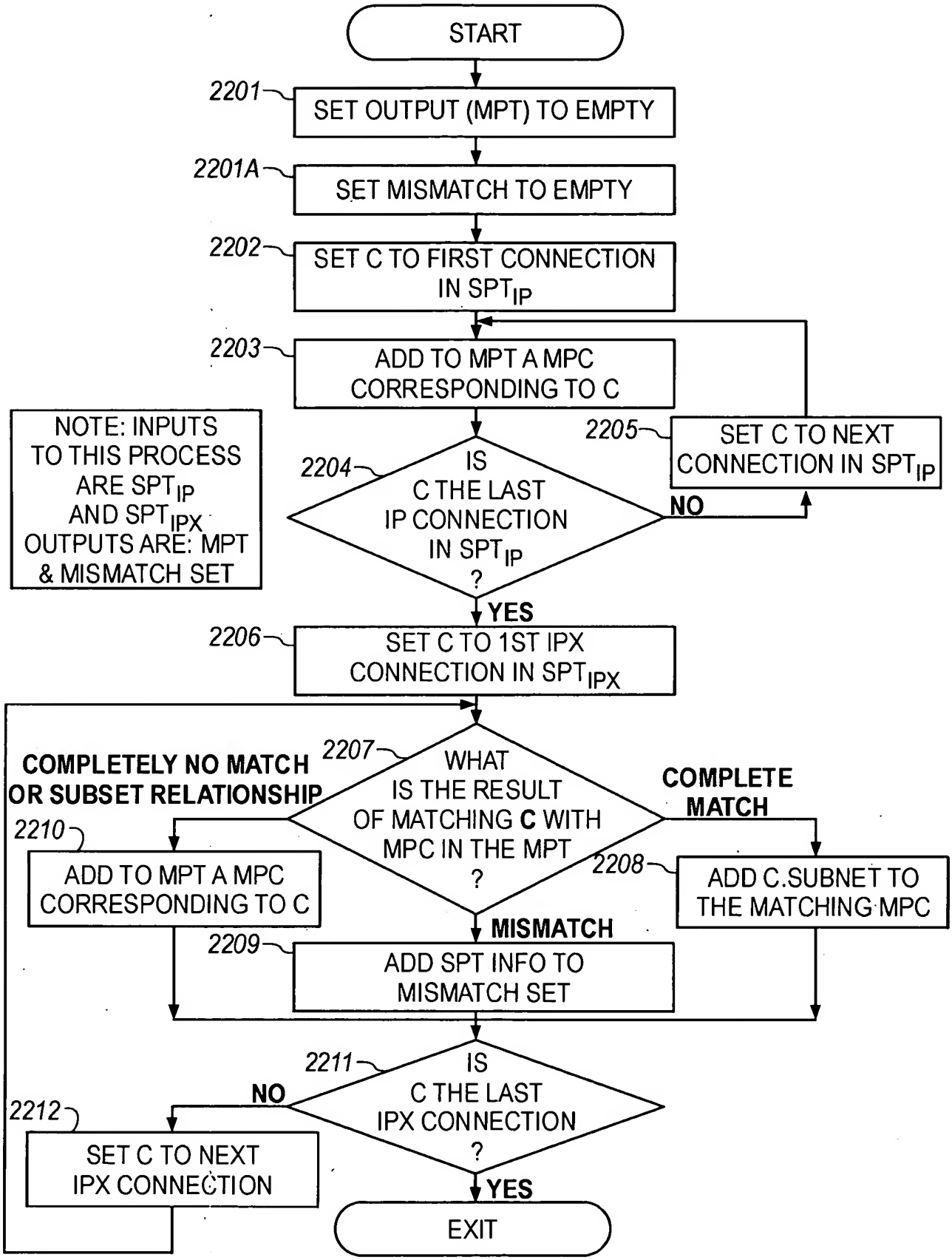


FIG. 22

EL652871260US

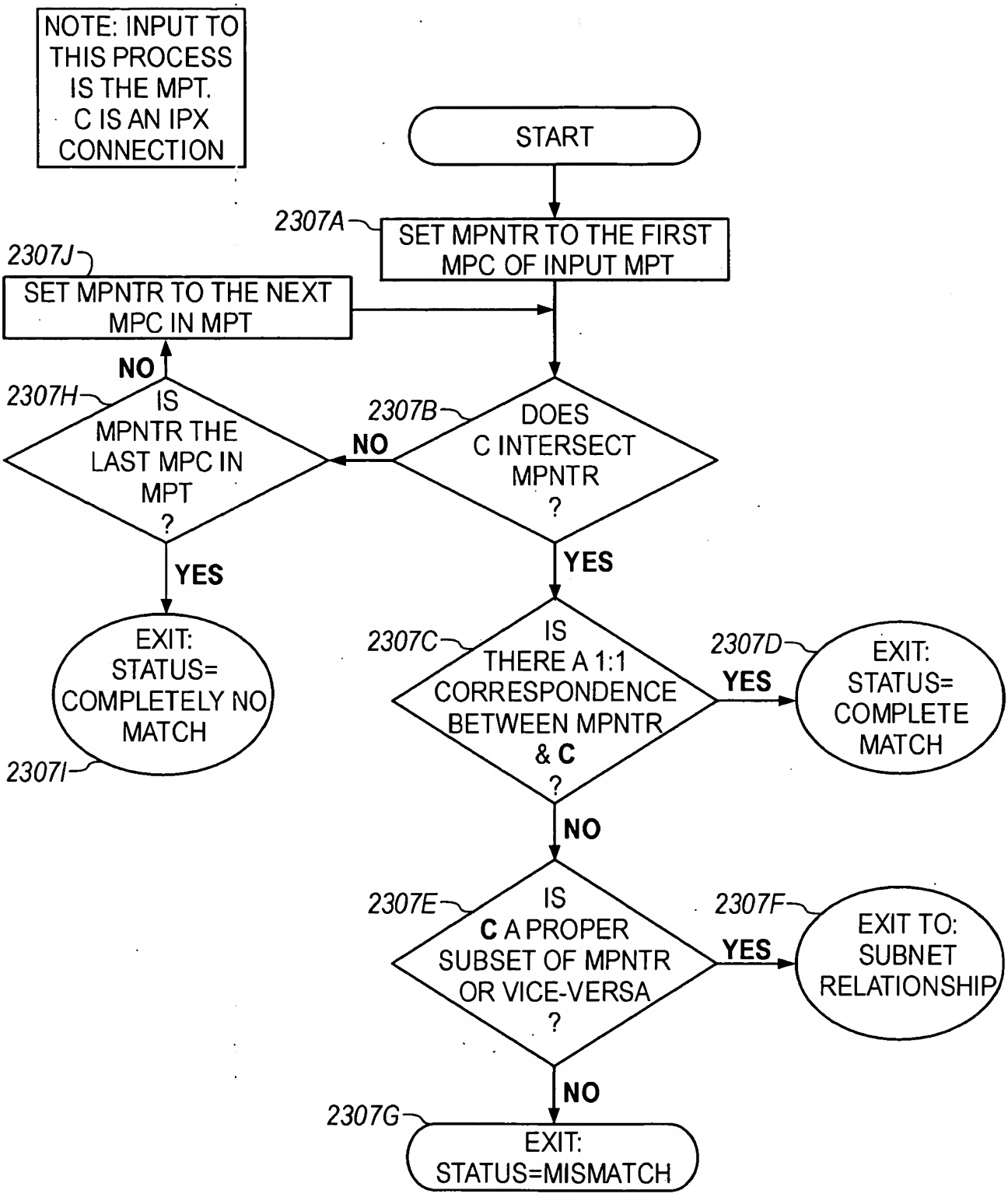


FIG. 23

EL652871260US

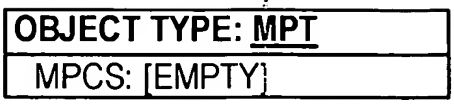


FIG. 24A

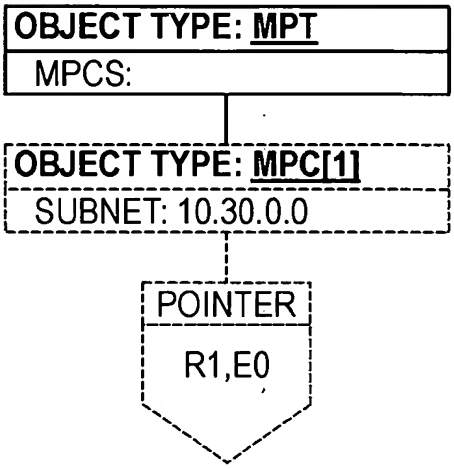


FIG. 24B

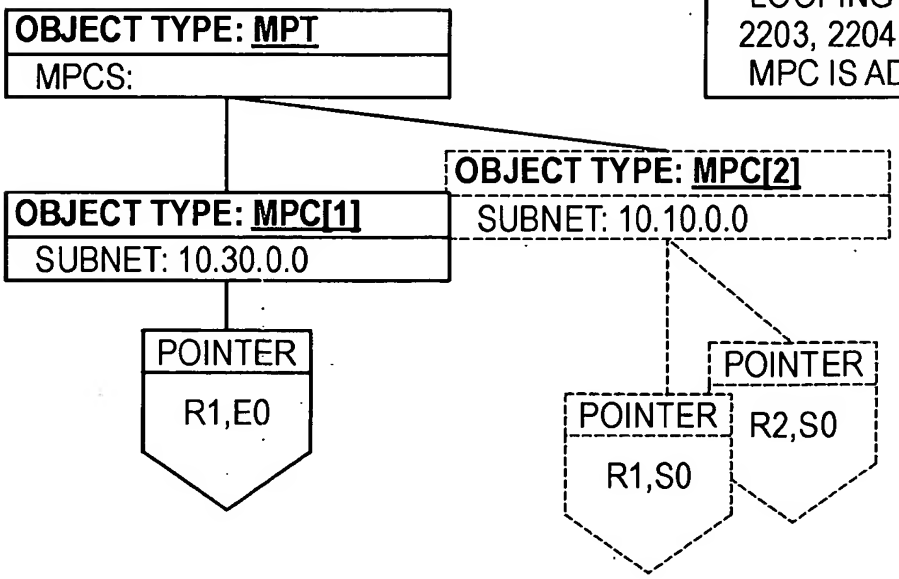
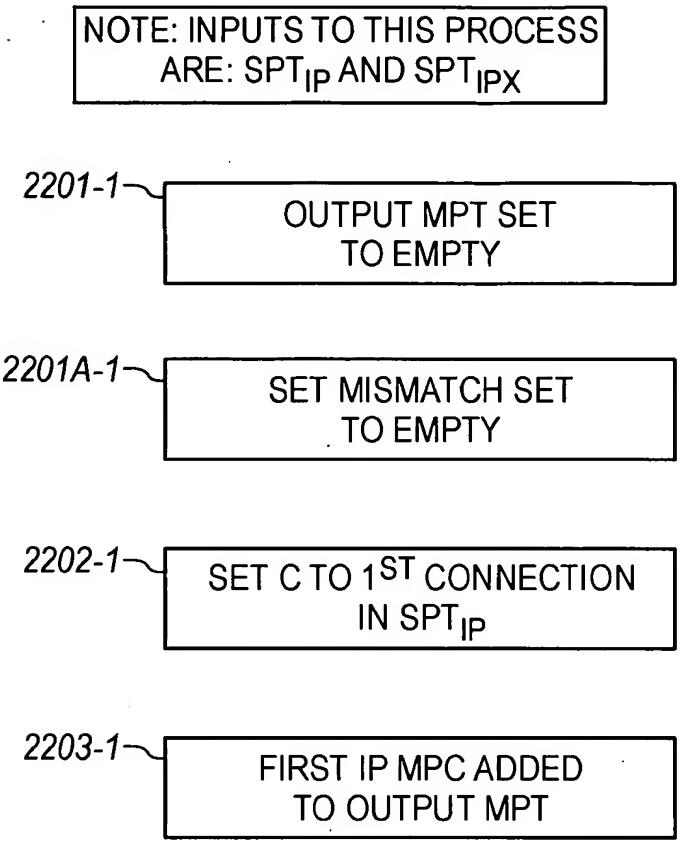


FIG. 24C



Express Mail Label No. EL652871260US

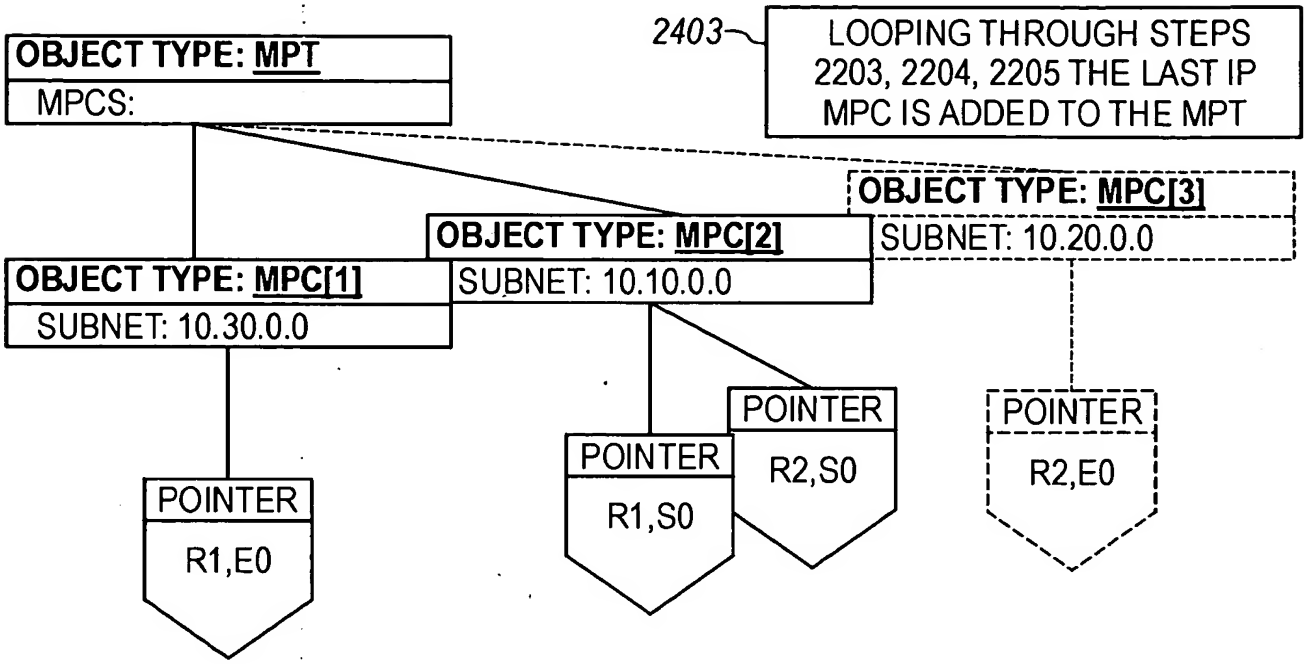


FIG. 24D

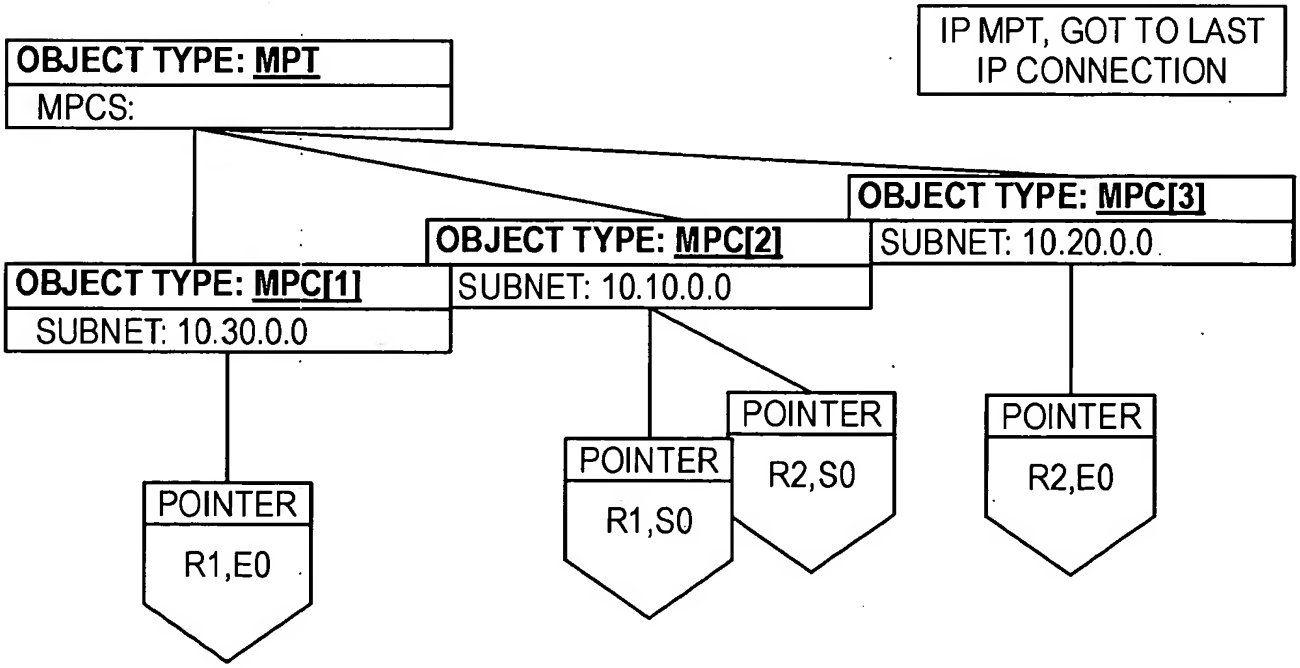


FIG. 24E

SUBSTITUTE SHEET (RULE 26)

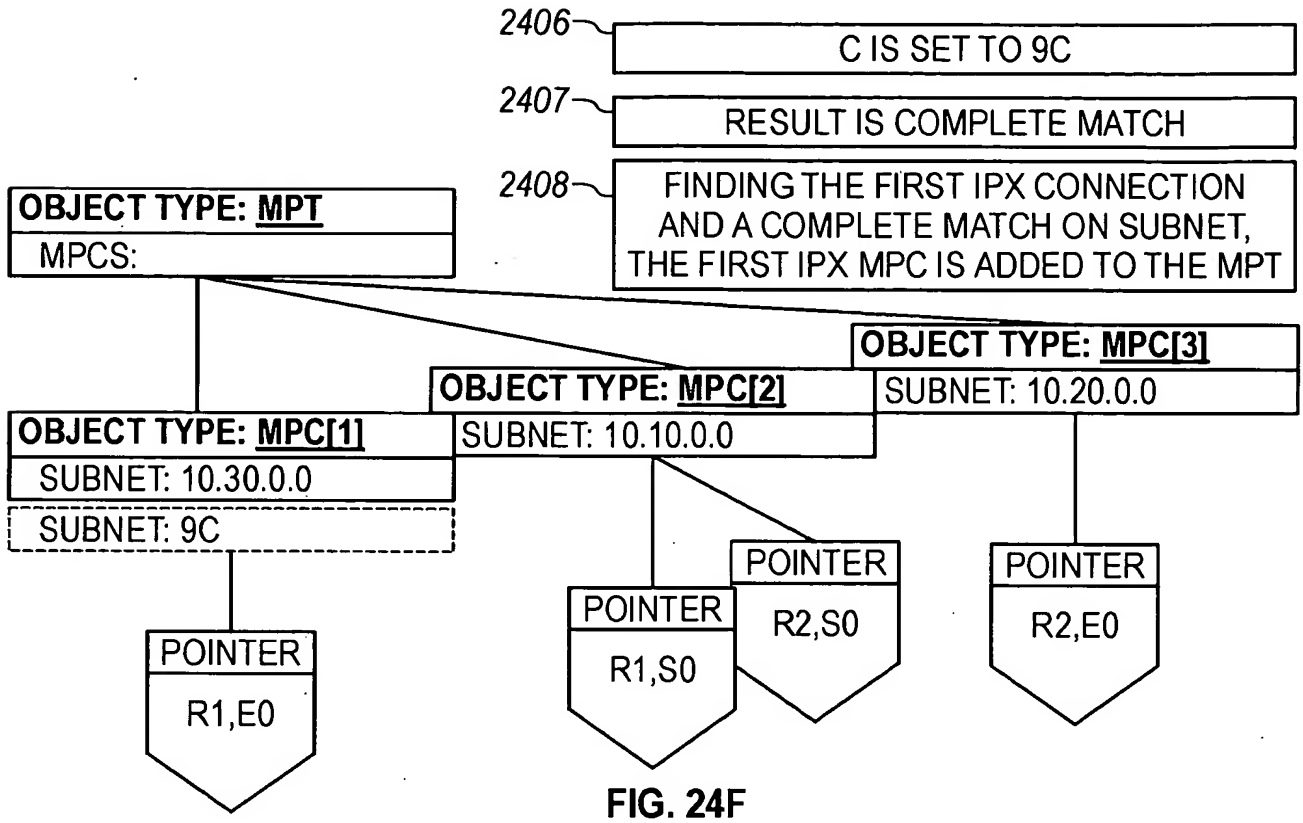


FIG. 24F

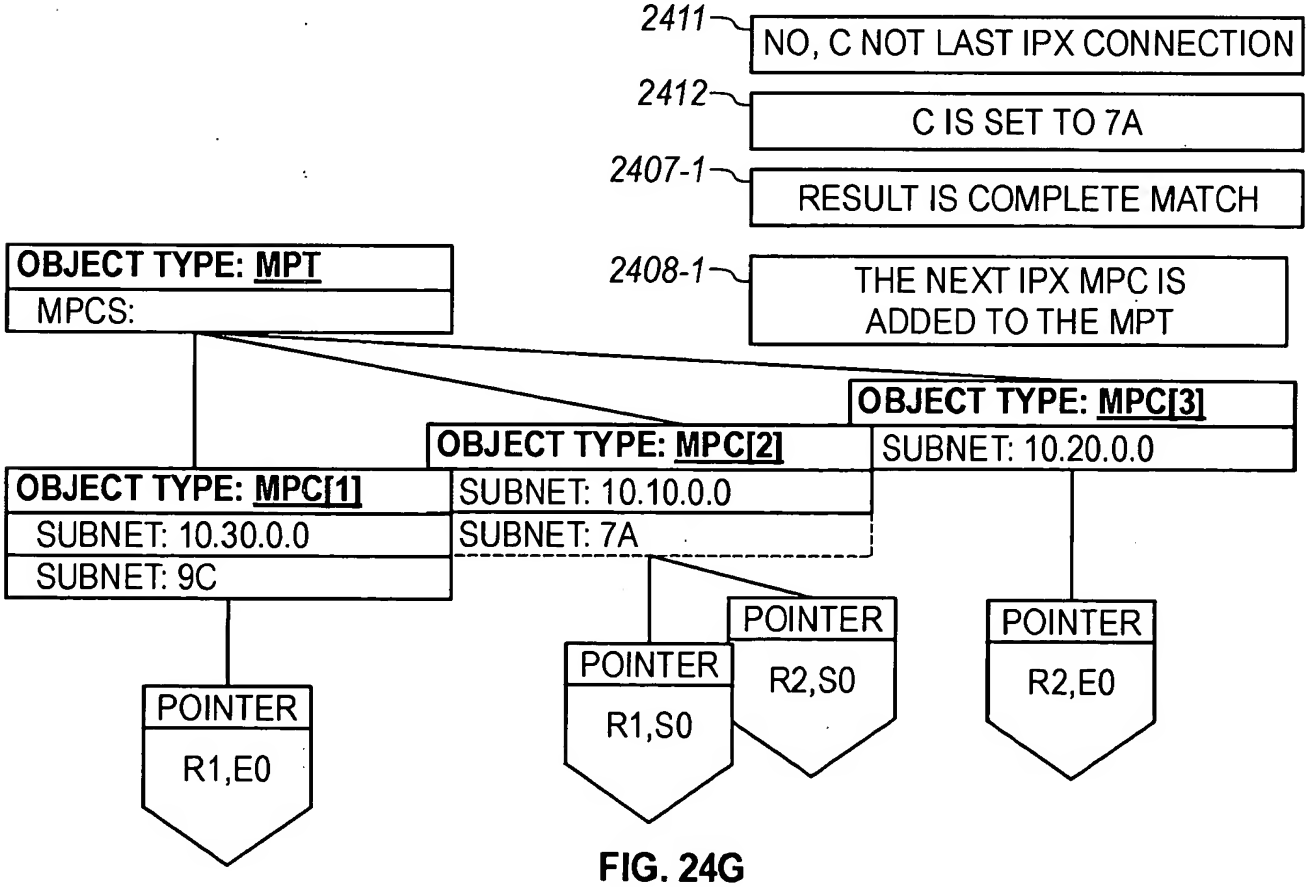


FIG. 24G

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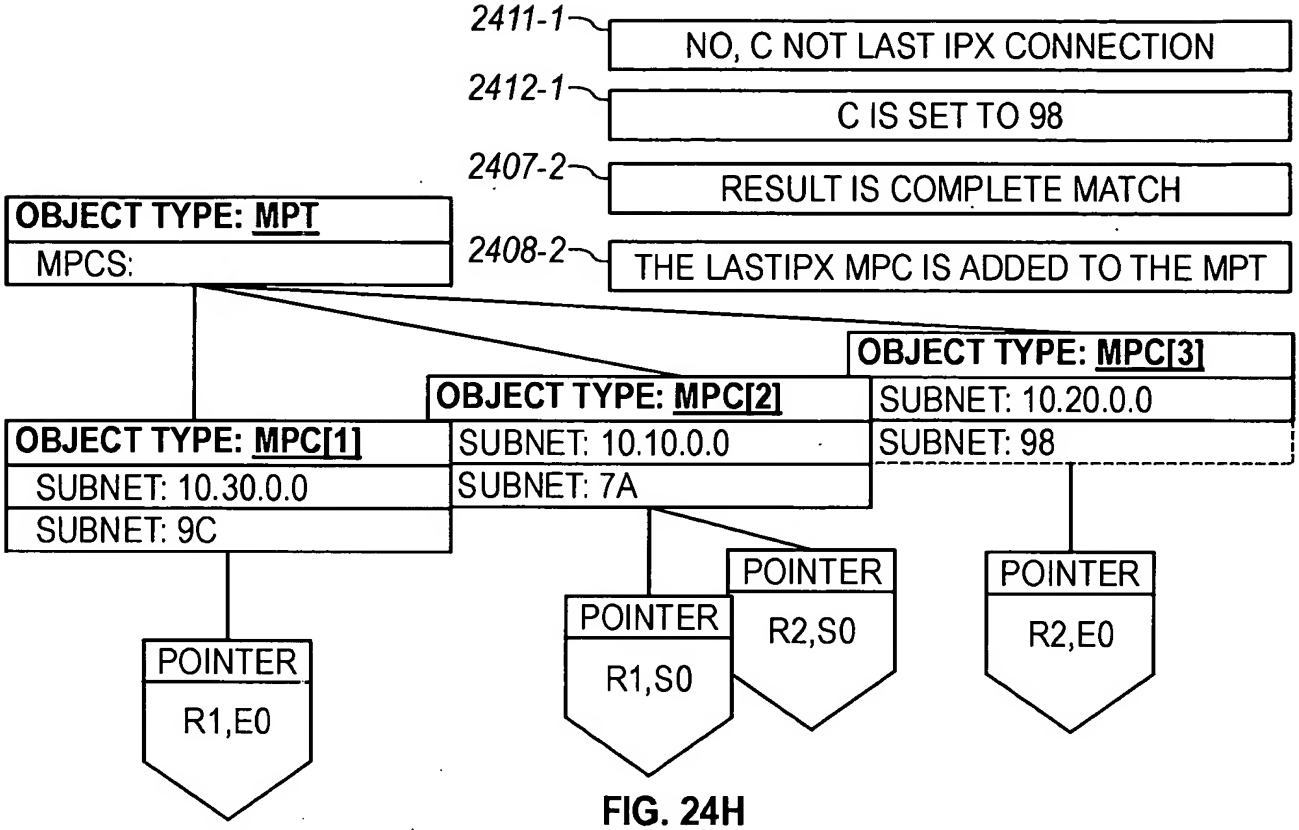


FIG. 24H

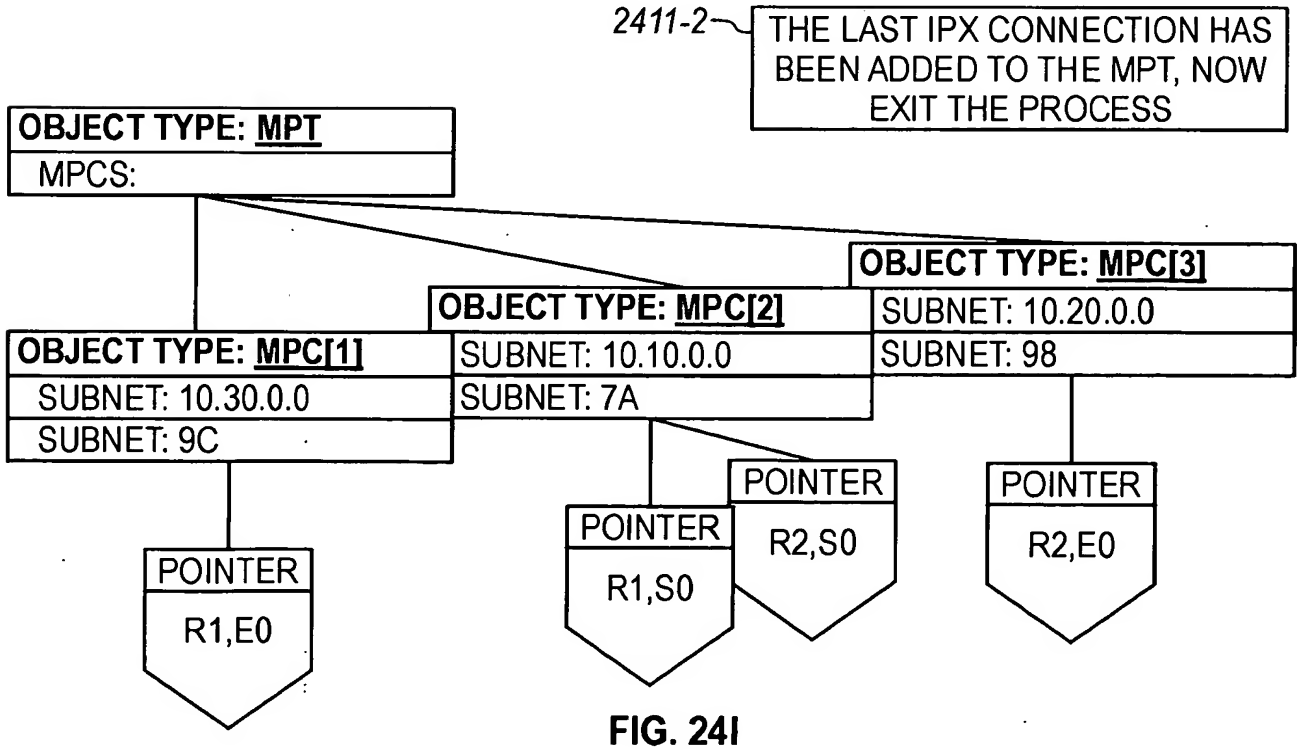


FIG. 24I

EL652871260US

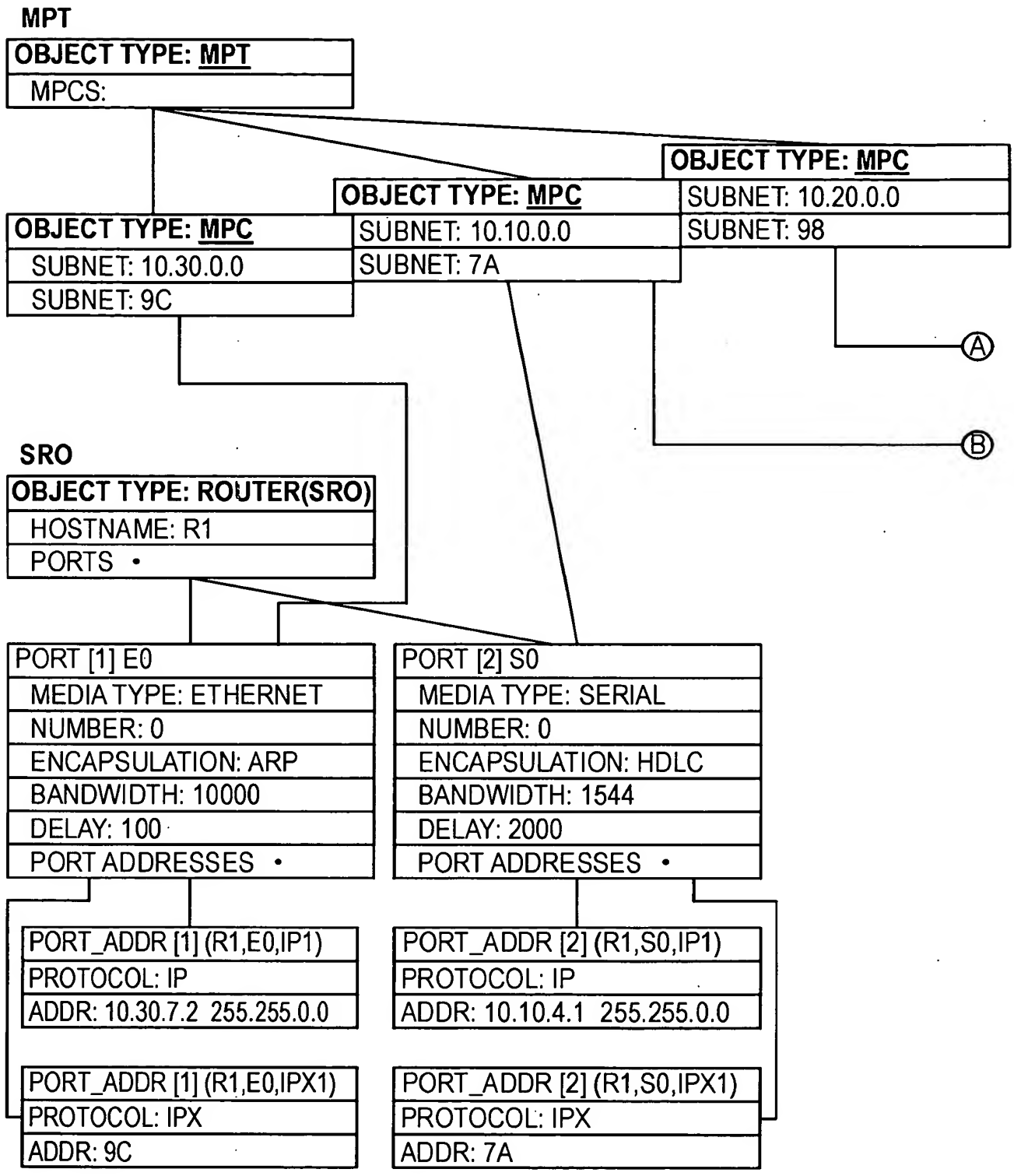


FIG. 25A

D0074805.02120202

EL652871260US

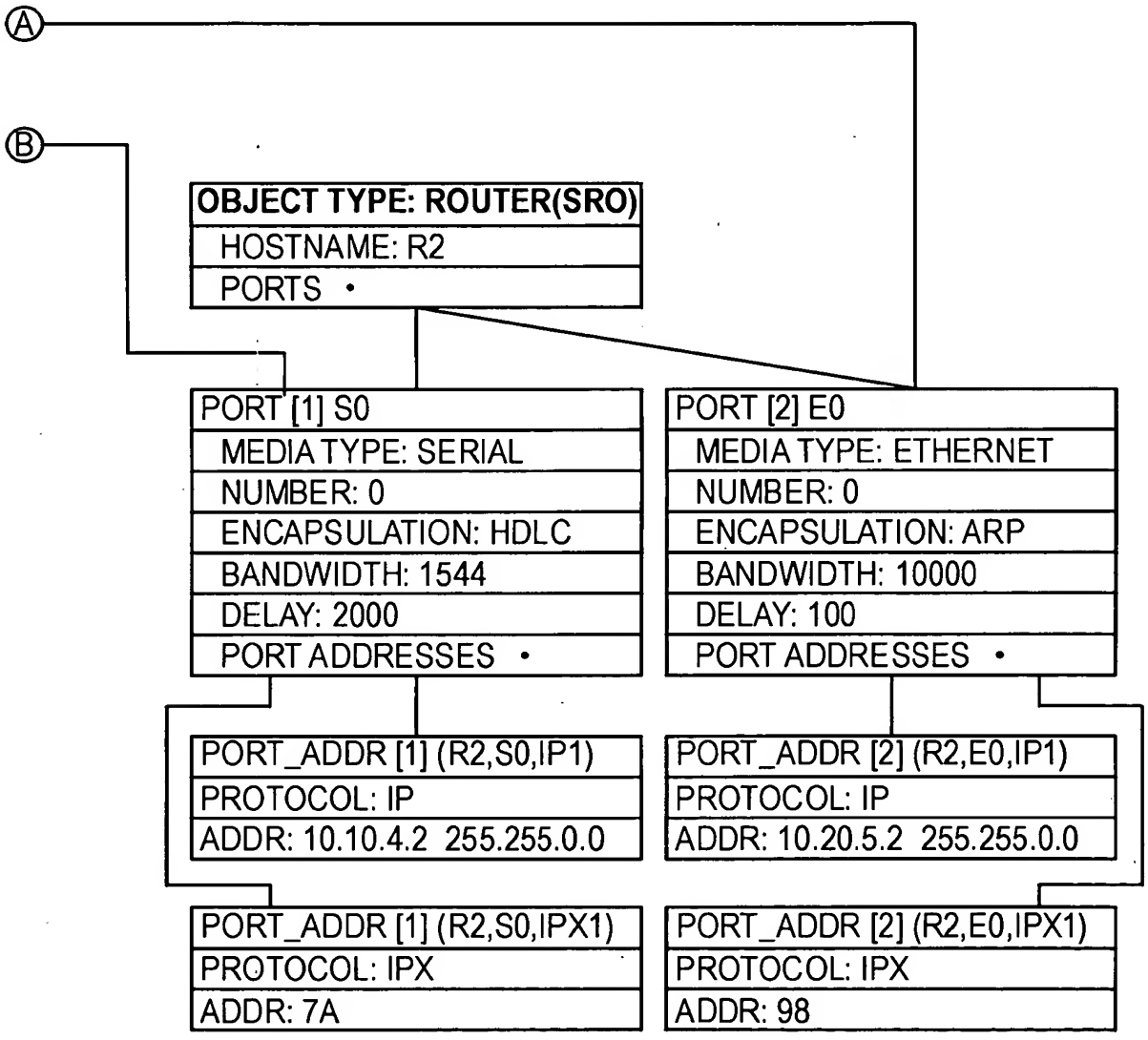
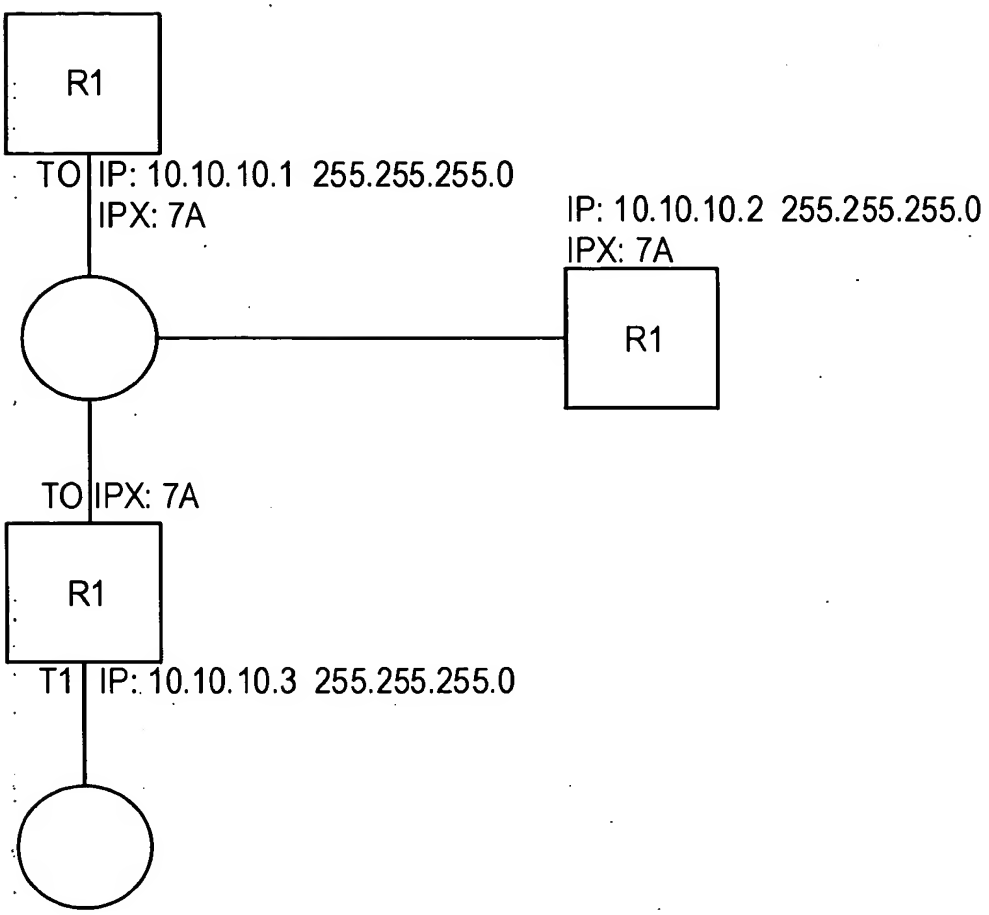


FIG. 25B



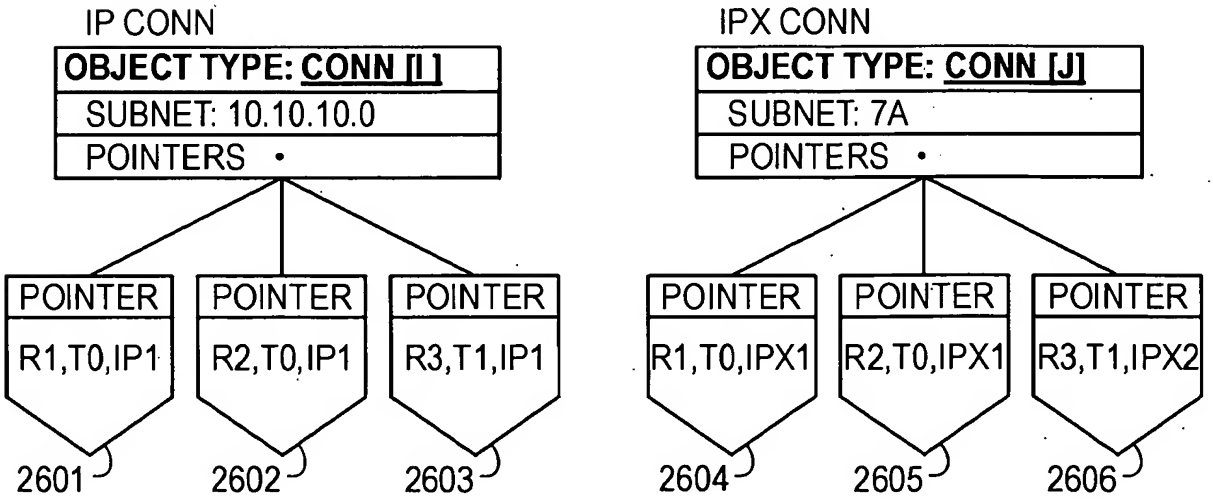


FIG. 26

20020120-0050v1.0

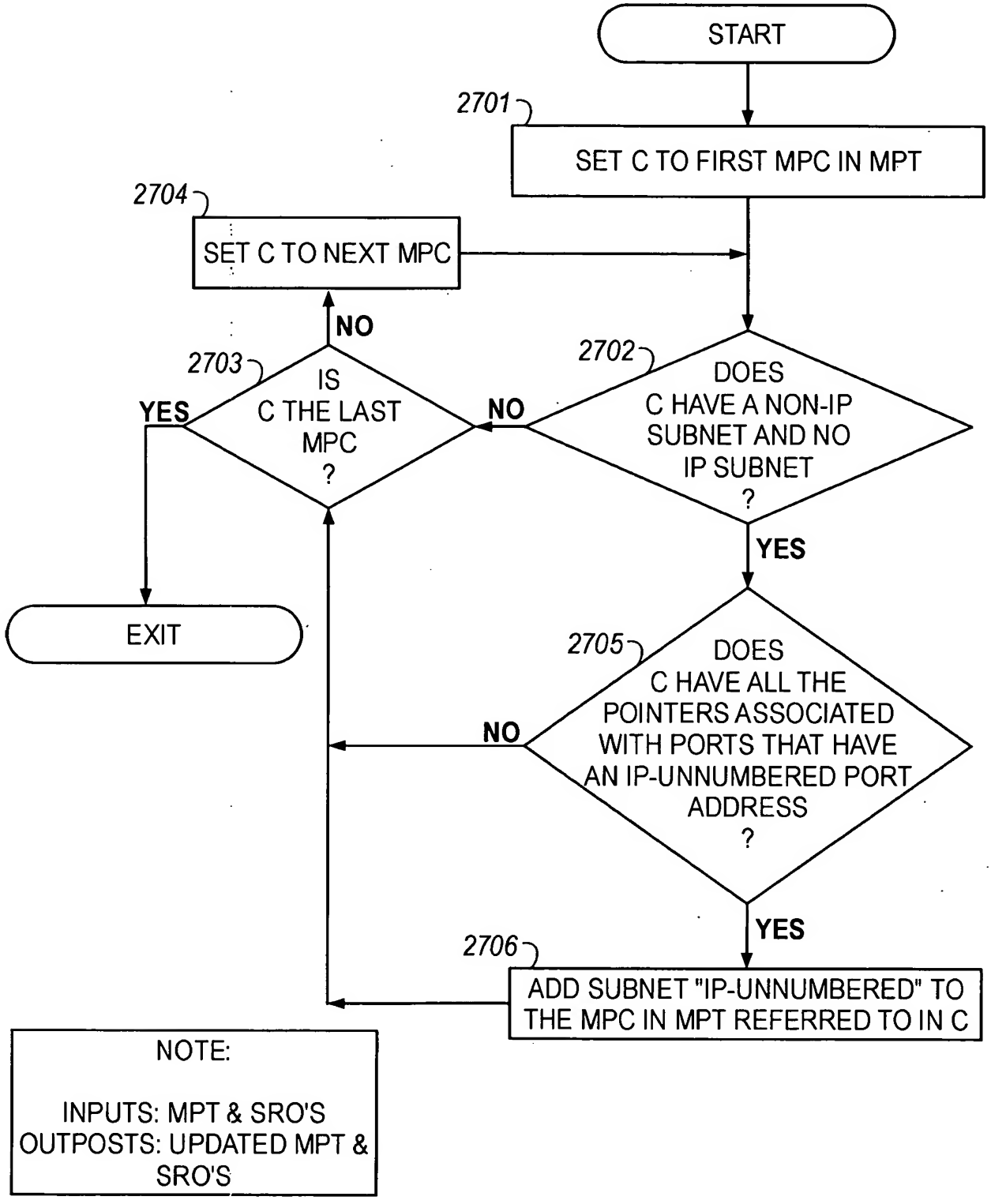


FIG. 27

EL652871260US

EL652871260US

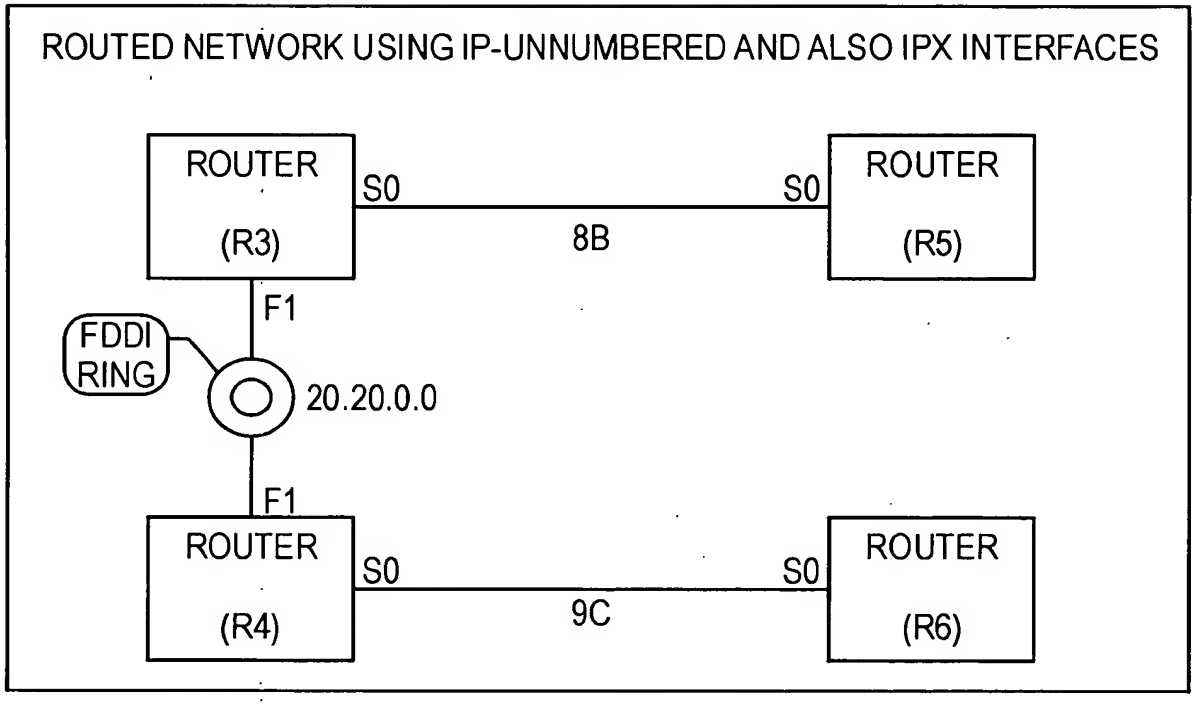


FIG. 28

ROUTER R3: 2901

```
VERSION 10.0
!
HOSTNAME R3
!
NOVELL ROUTING 0000.0C08.94DD
!
INTERFACE LOOPBACK 1
IP ADDRESS 122.33.2.1  255.255.0.0

INTERFACE SERIAL0
IP-UNNUMBERED LOOPBACK 1
IPX NETWORK 8B
!
INTERFACE FDDI 0
IP ADDRESS 20.20.1.1  255.255.0.0
END
```

FIG. 29A

ROUTER R4:

```
VERSION 10.0
!
HOSTNAME R4
!
NOVELL ROUTING 0000.0C04.3A3E
!
INTERFACE LOOPBACK 1
IP ADDRESS 127.38.7.6  255.255.0.0

INTERFACE SERIAL0
IP-UNNUMBERED LOOPBACK 1
IPX NETWORK 9C
!
INTERFACE FDDI 0
IP ADDRESS 20.20.0.0  255.255.0.0
END
```

FIG. 29B

ROUTER R5:

```
VERSION 10.0
!
HOSTNAME R5
!
NOVELL ROUTING 0000.0D09.A5EE
!
INTERFACE LOOPBACK 1
IP ADDRESS 127.38.7.6  255.255.0.0

INTERFACE SERIAL0
IP-UNNUMBERED LOOPBACK 1
IPX NETWORK 8B
!
END
```

FIG. 29C

ROUTER R6:

```
VERSION 10.0
!
HOSTNAME R6
!
NOVELL ROUTING 0000.0D05.4B4F
!
INTERFACE LOOPBACK 1
IP ADDRESS 132.43.12.11  255.255.0.0

INTERFACE SERIAL0
IP-UNNUMBERED LOOPBACK 1
IPX NETWORK 9C
!
END
```

FIG. 29D

10074805.022402

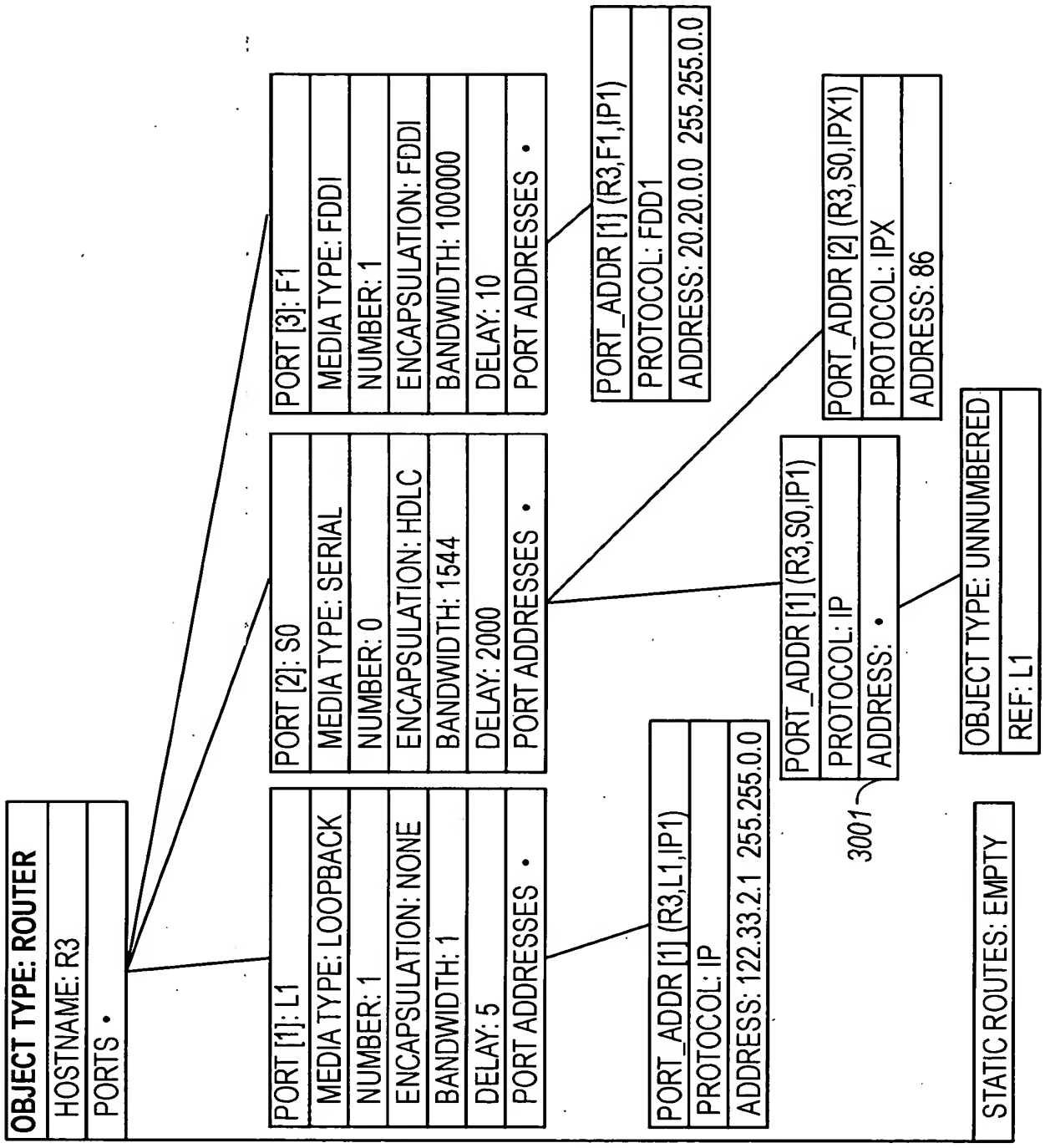


FIG. 30A

20120-5084-2001

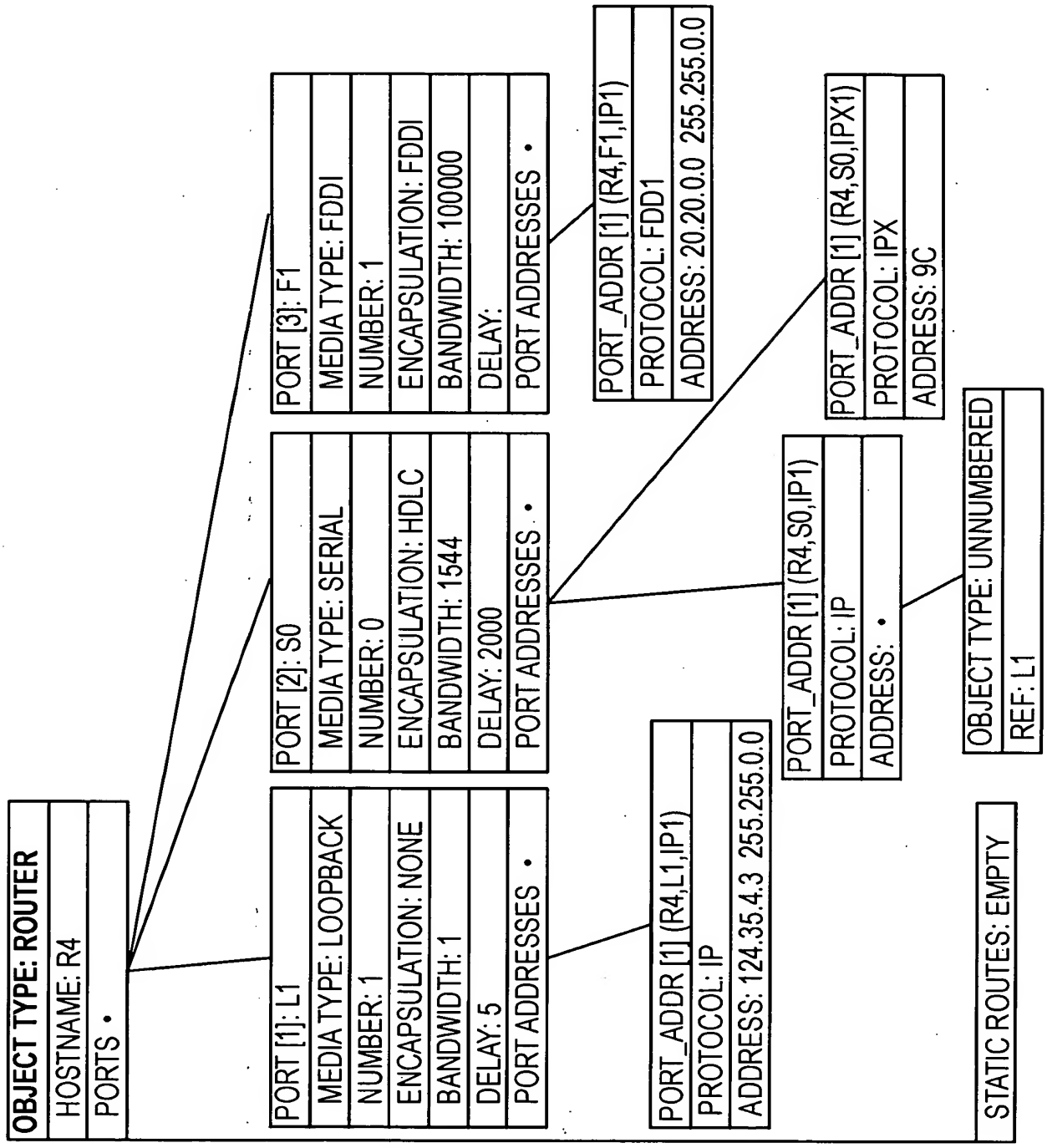


FIG. 30B

20120-5084.007

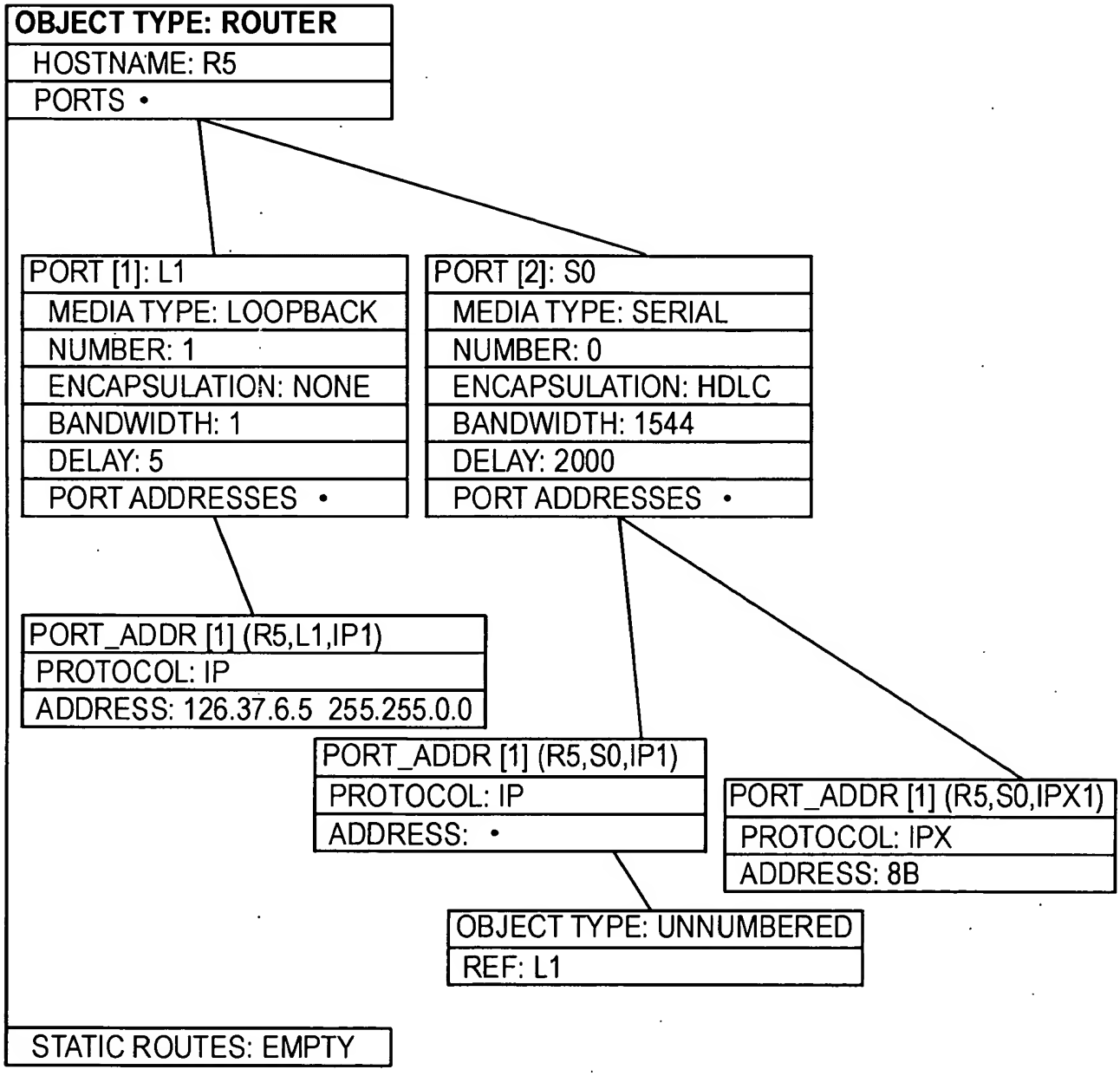

OBJECT TYPE: ROUTER
HOSTNAME: R5
PORTS •
PORT [1]: L1
MEDIA TYPE: LOOPBACK
NUMBER: 1
ENCAPSULATION: NONE
BANDWIDTH: 1
DELAY: 5
PORT ADDRESSES •
PORT [2]: S0
MEDIA TYPE: SERIAL
NUMBER: 0
ENCAPSULATION: HDLC
BANDWIDTH: 1544
DELAY: 2000
PORT ADDRESSES •
PORT_ADDR [1] (R5,L1,IP1)
PROTOCOL: IP
ADDRESS: 126.37.6.5 255.255.0.0
PORT_ADDR [1] (R5,S0,IP1)
PROTOCOL: IP
ADDRESS: •
PORT_ADDR [1] (R5,S0,IPX1)
PROTOCOL: IPX
ADDRESS: 8B
OBJECT TYPE: UNNUMBERED
REF: L1
STATIC ROUTES: EMPTY

FIG. 30C

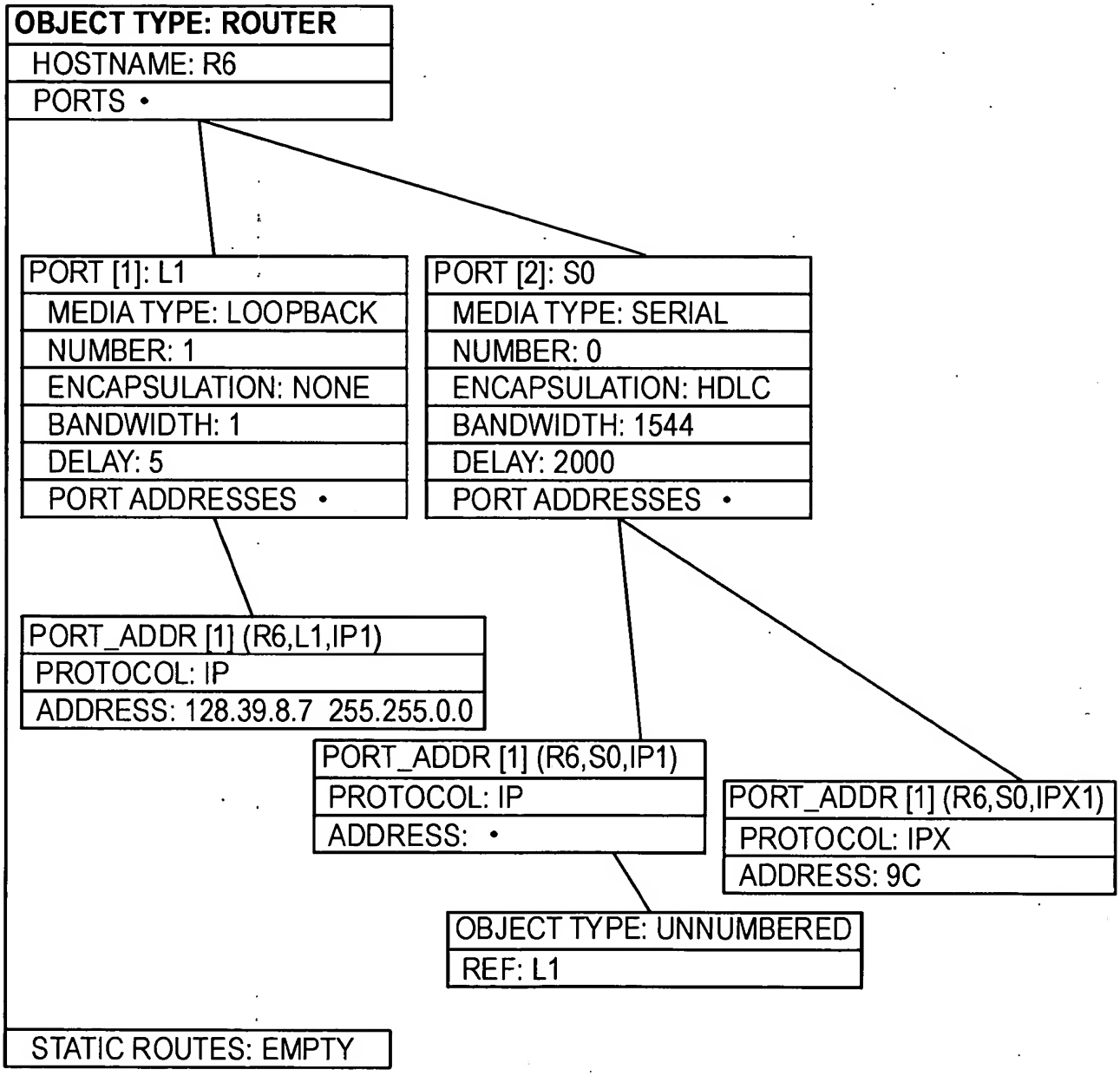


FIG. 30D

1005-0630-0202

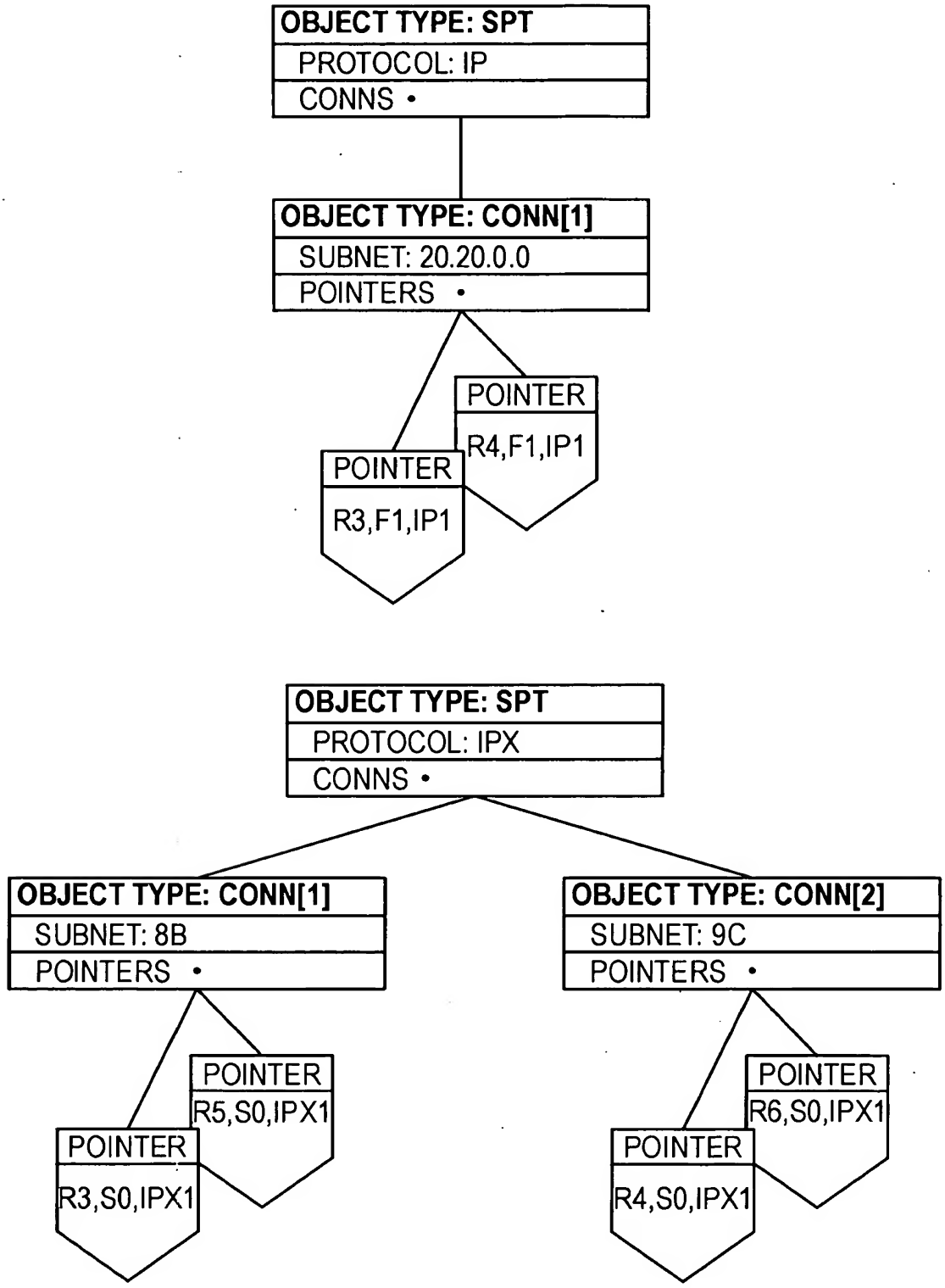


FIG. 30E

EL652871260US

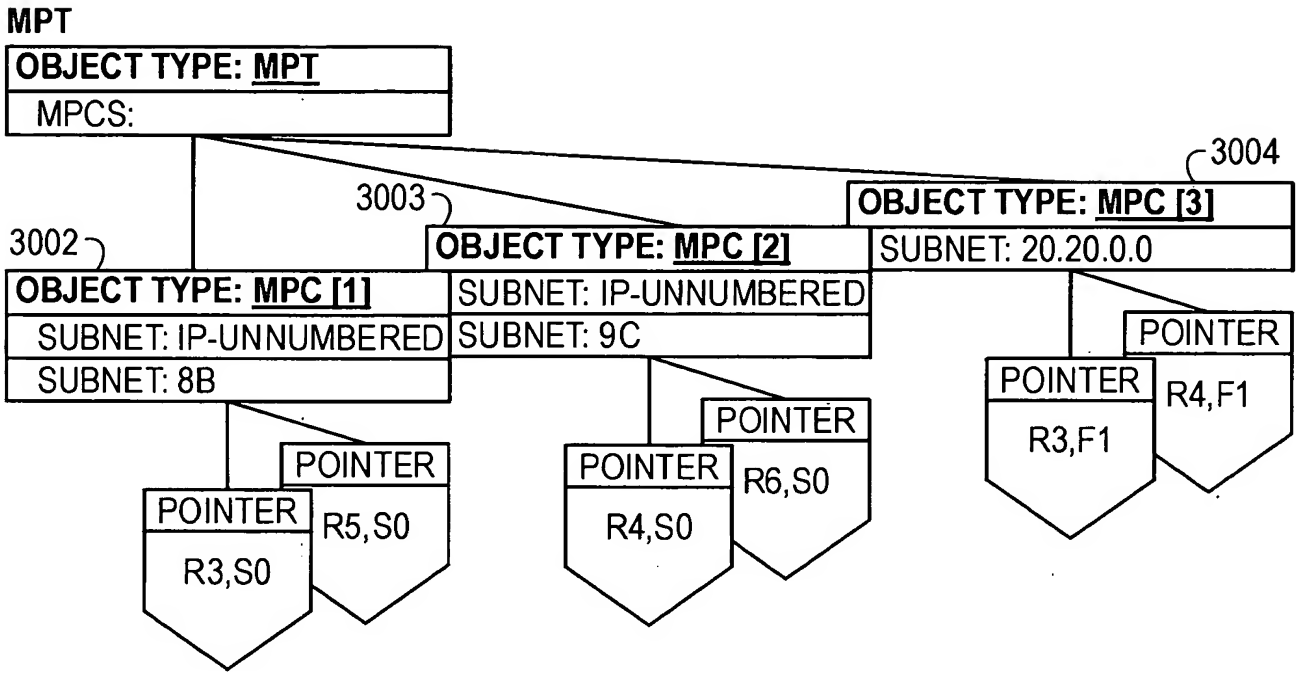


FIG. 30F

20120524.0847.0074

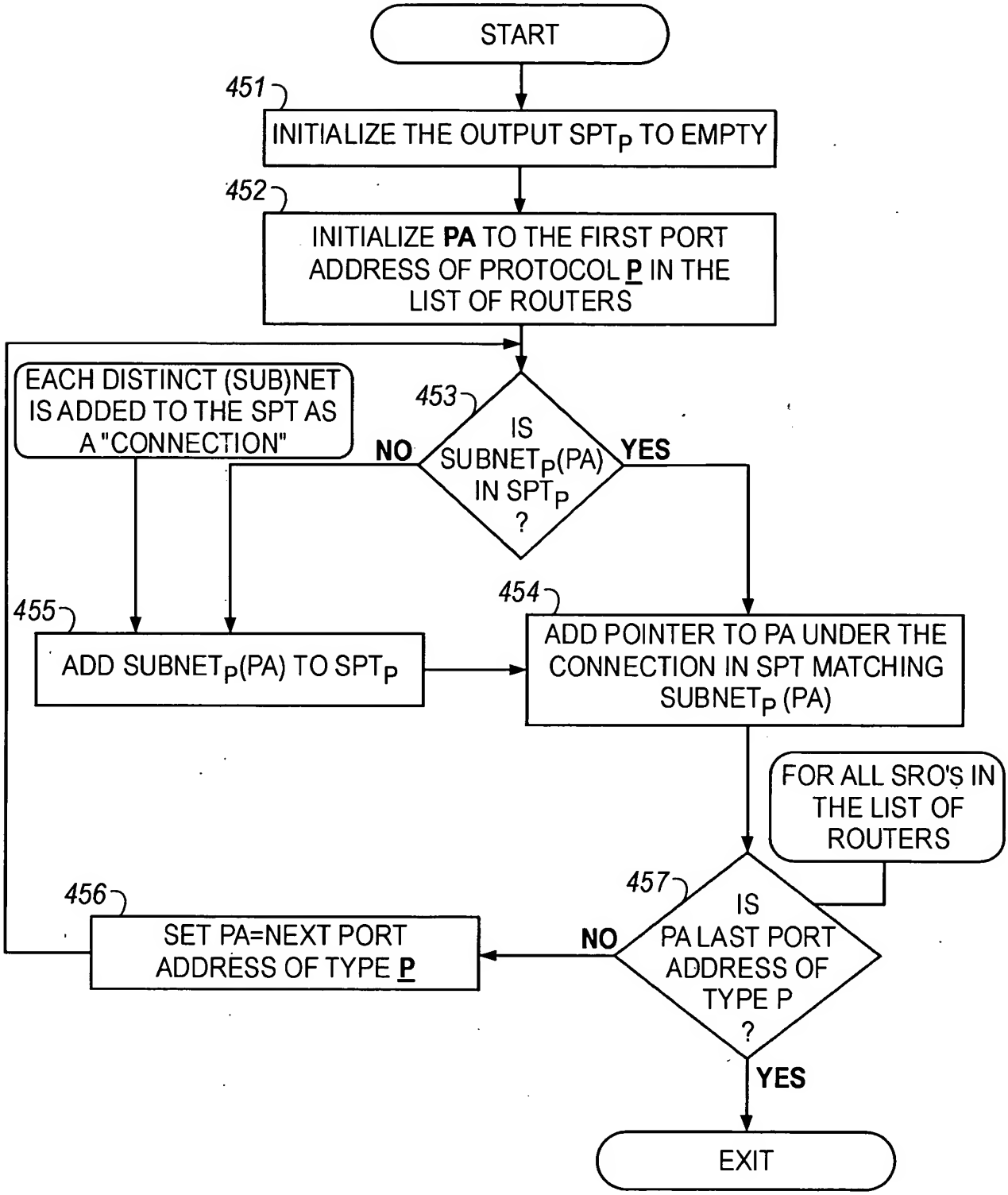


FIG. 31

20020120504 - 50325-0630

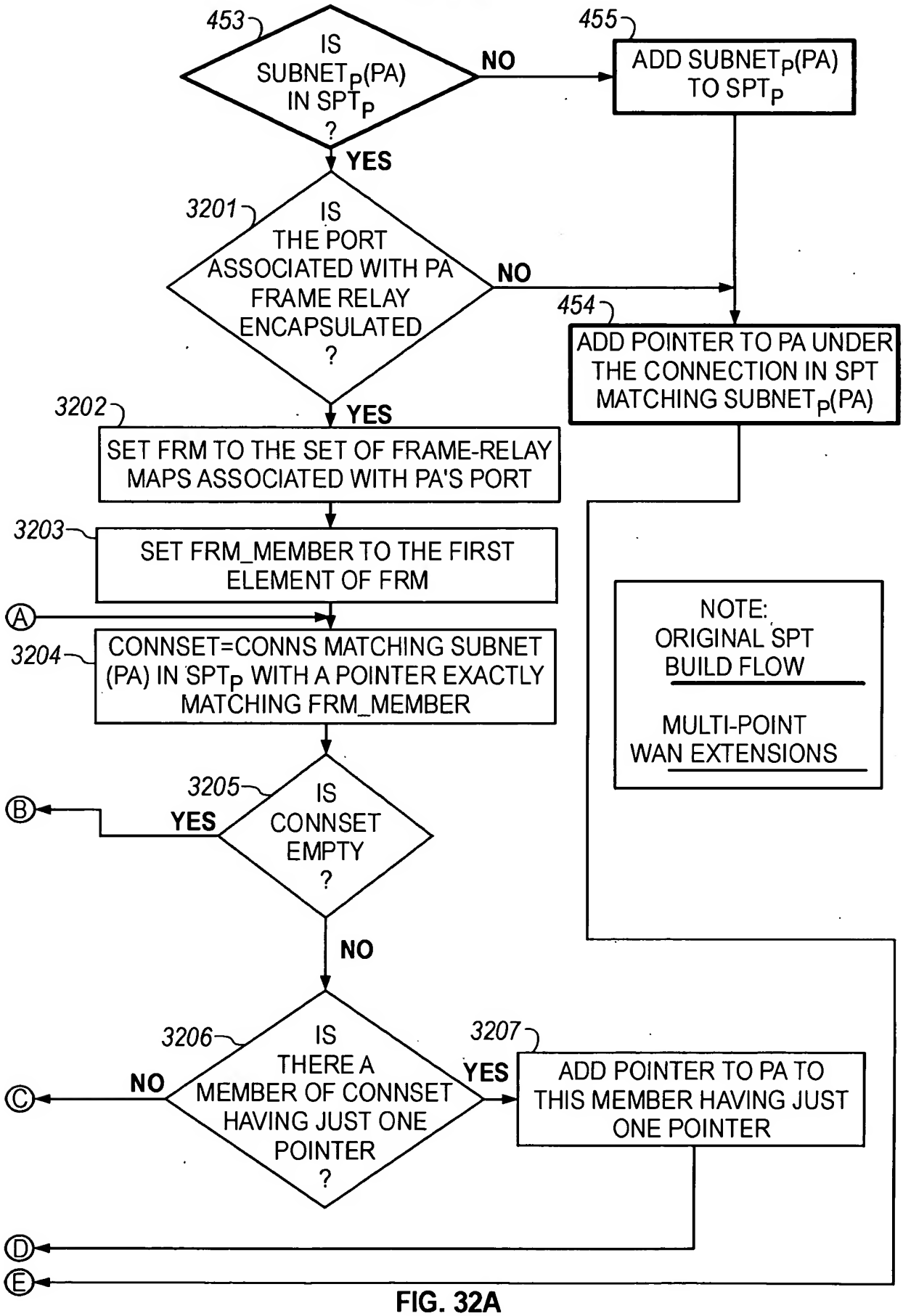

453
IS SUBNET$_P$(PA) IN SPT$_P$?
NO
455
ADD SUBNET$_P$(PA) TO SPT$_P$
YES
3201
IS THE PORT ASSOCIATED WITH PA FRAME RELAY ENCAPSULATED ?
NO
454
ADD POINTER TO PA UNDER THE CONNECTION IN SPT MATCHING SUBNET$_P$(PA)
YES
3202
SET FRM TO THE SET OF FRAME-RELAY MAPS ASSOCIATED WITH PA'S PORT
3203
SET FRM_MEMBER TO THE FIRST ELEMENT OF FRM
A
3204
CONNSET=CONNS MATCHING SUBNET (PA) IN SPT$_P$ WITH A POINTER EXACTLY MATCHING FRM_MEMBER
3205
IS CONNSET EMPTY ?
B
YES
NO
3206
IS THERE A MEMBER OF CONNSET HAVING JUST ONE POINTER ?
NO
C
YES
3207
ADD POINTER TO PA TO THIS MEMBER HAVING JUST ONE POINTER
D
E
NOTE:
ORIGINAL SPT BUILD FLOW
MULTI-POINT WAN EXTENSIONS

FIG. 32A

EL652871260US

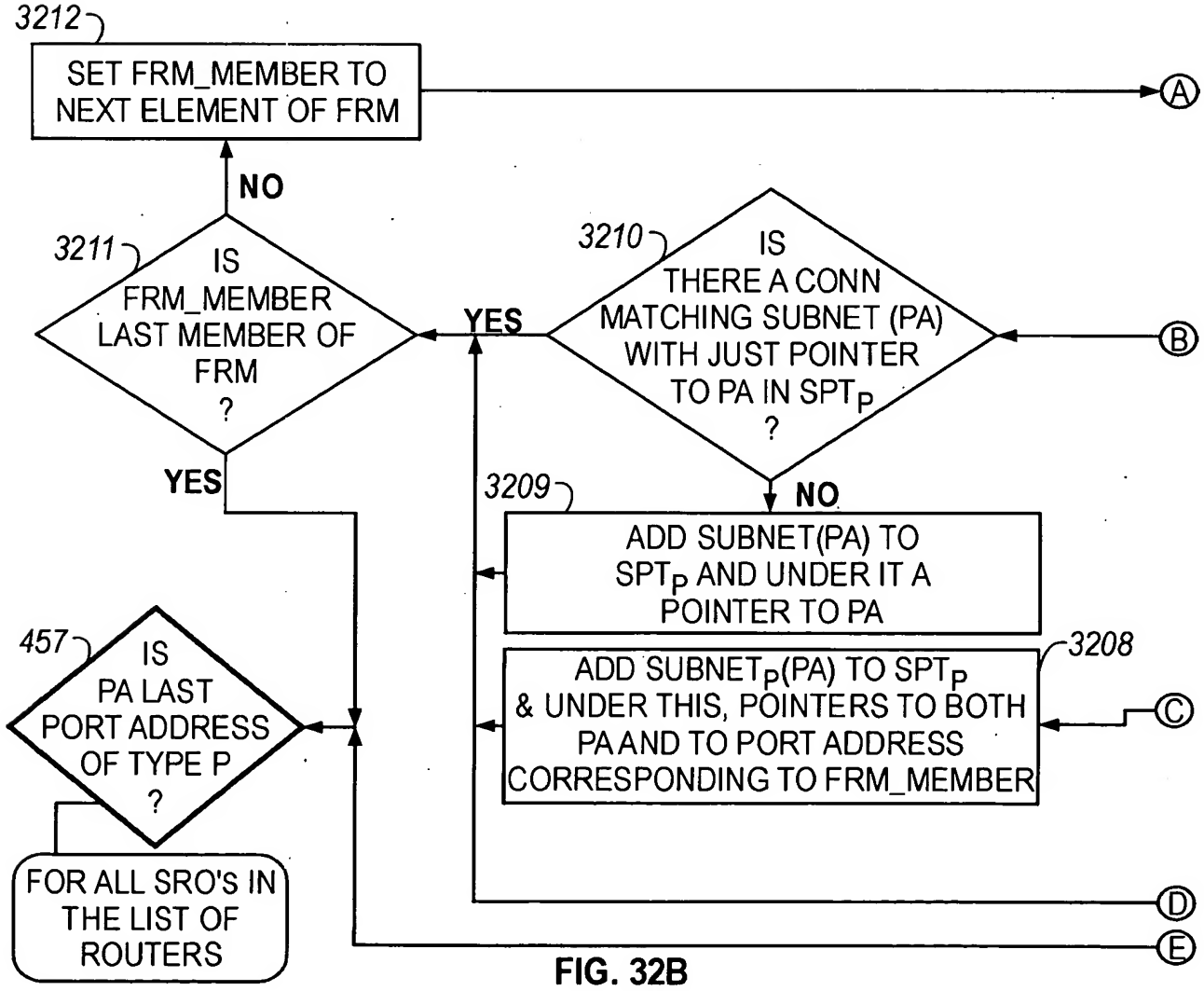


FIG. 32B

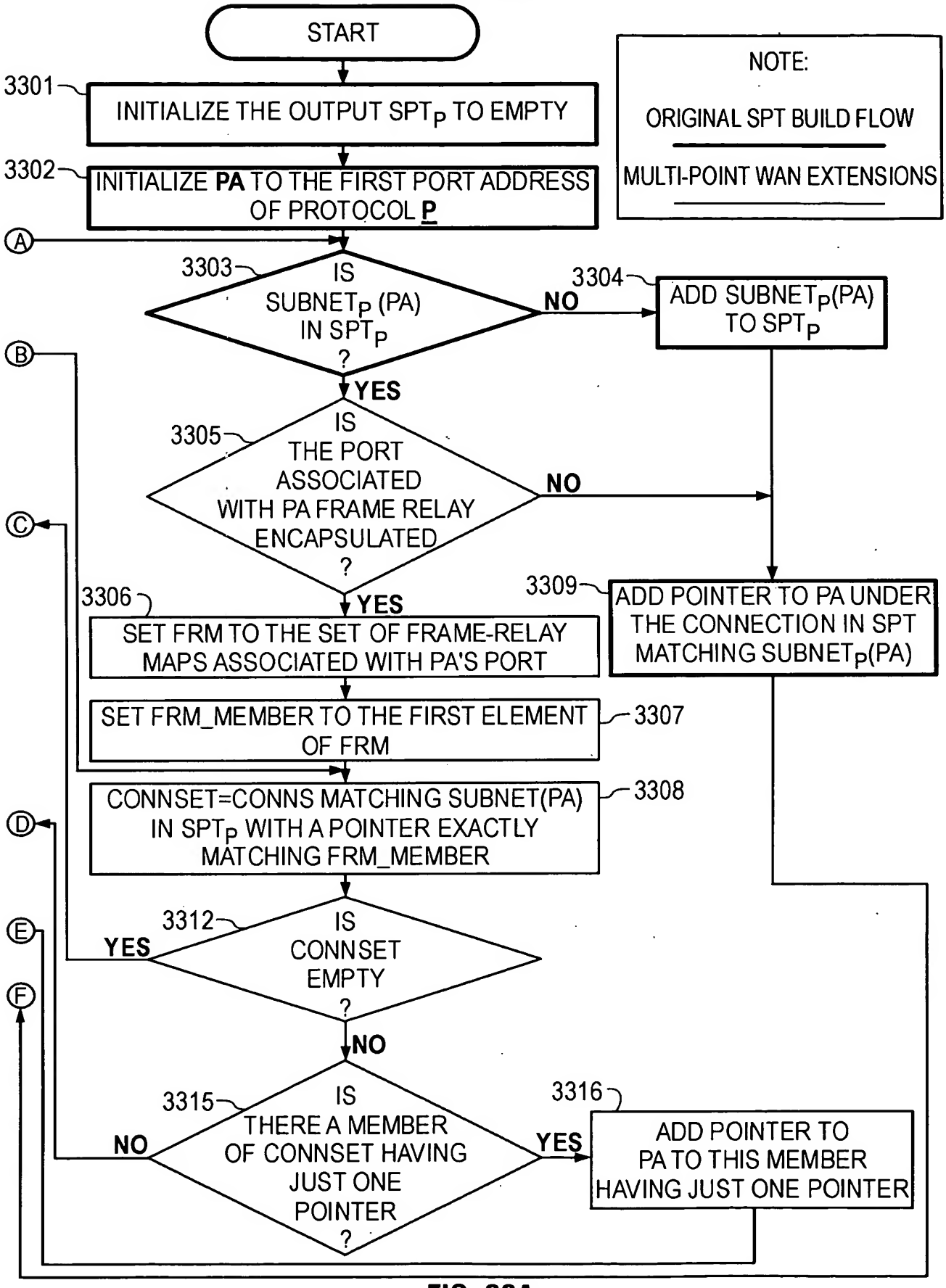


FIG. 33A

20020194605-0012

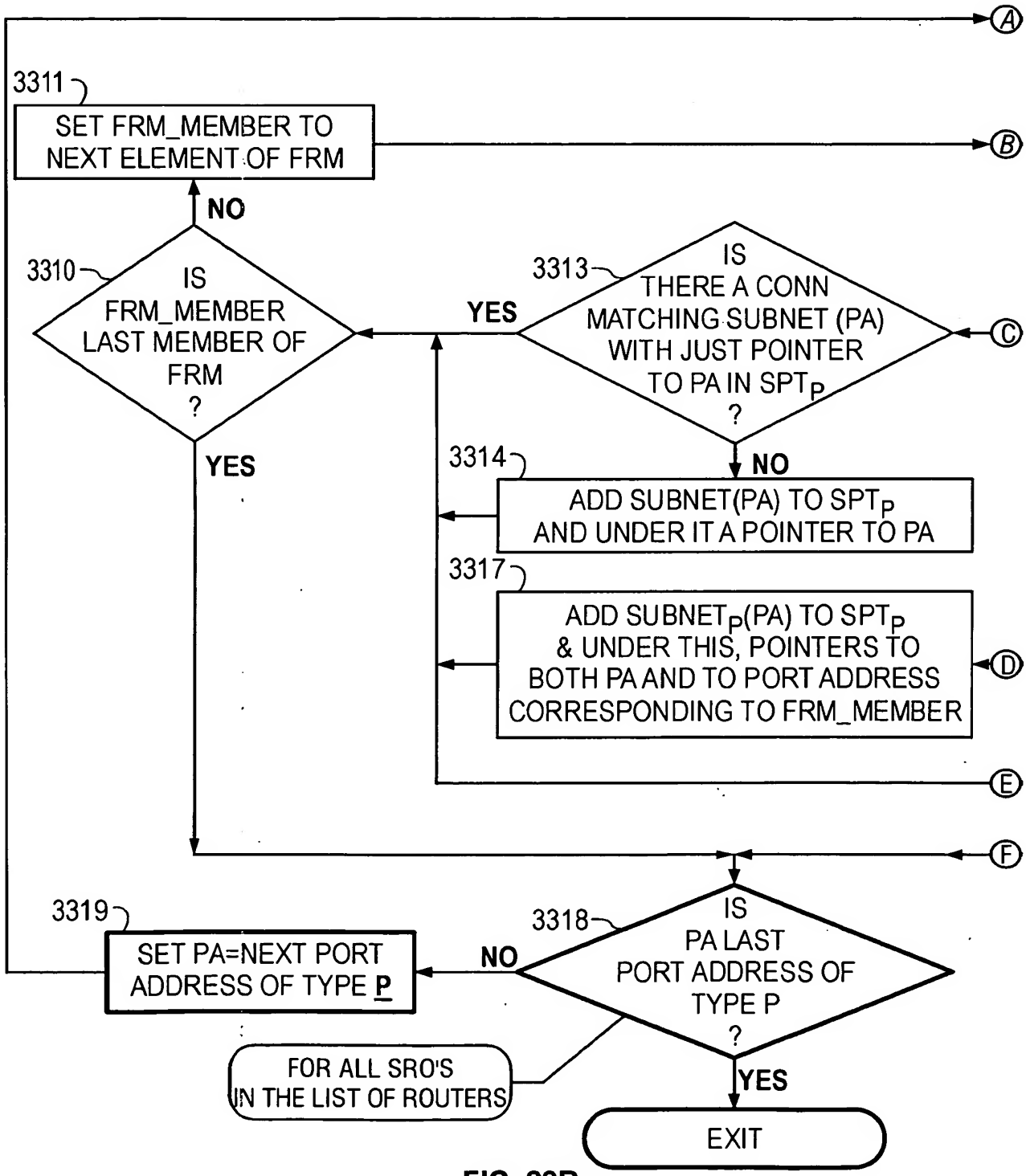

A
3311
SET FRM_MEMBER TO NEXT ELEMENT OF FRM
B
NO
3310
IS FRM_MEMBER LAST MEMBER OF FRM ?
YES
3313
IS THERE A CONN MATCHING SUBNET (PA) WITH JUST POINTER TO PA IN SPTP ?
C
YES
NO
3314
ADD SUBNET(PA) TO SPTP AND UNDER IT A POINTER TO PA
3317
ADD SUBNETP(PA) TO SPTP & UNDER THIS, POINTERS TO BOTH PA AND TO PORT ADDRESS CORRESPONDING TO FRM_MEMBER
D
E
F
3319
SET PA=NEXT PORT ADDRESS OF TYPE P
NO
3318
IS PA LAST PORT ADDRESS OF TYPE P ?
FOR ALL SRO'S IN THE LIST OF ROUTERS
YES
EXIT

FIG. 33B

20020620.5084/001

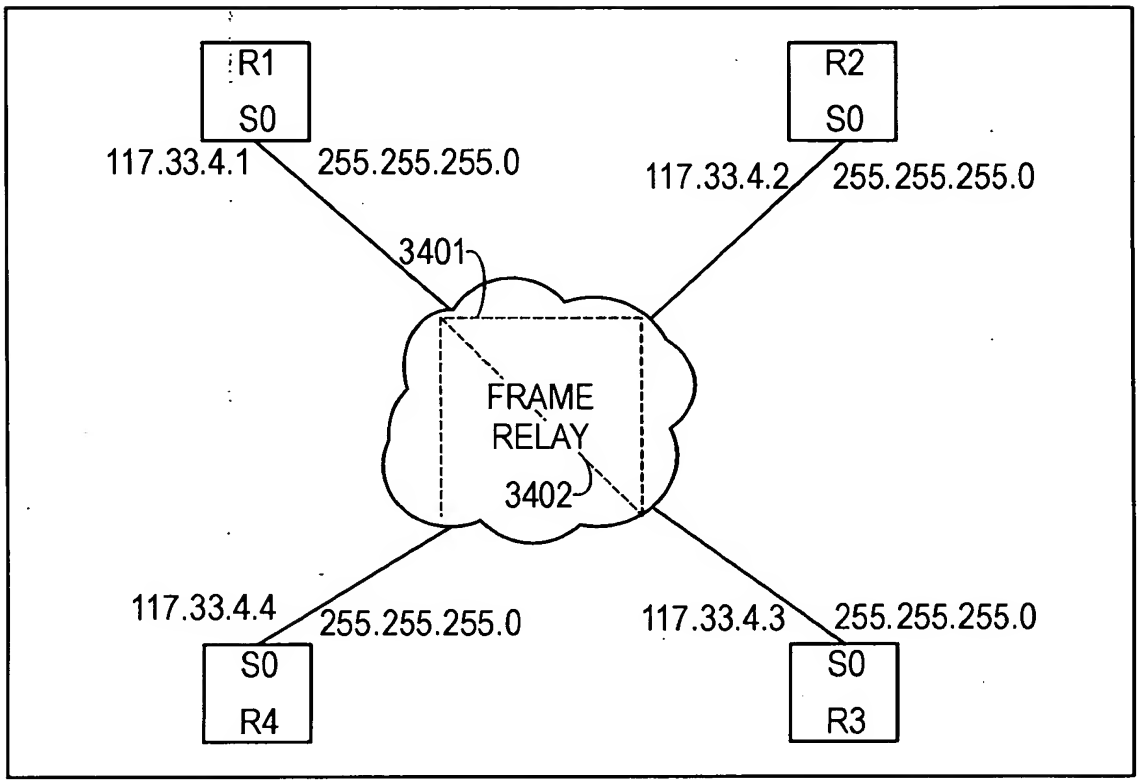


FIG. 34

NOTE TO FIGURE 34

THE NOTION OF A FRAME RELAY CLOUD IMPLIES FULLY MESHED CONNECTIVITY, YET IN ACTUALITY CONNECTIVITY MAY BE LIMITED AS SHOWN WITH DOTTED LINES INSIDE CLOUD

EL652871260US

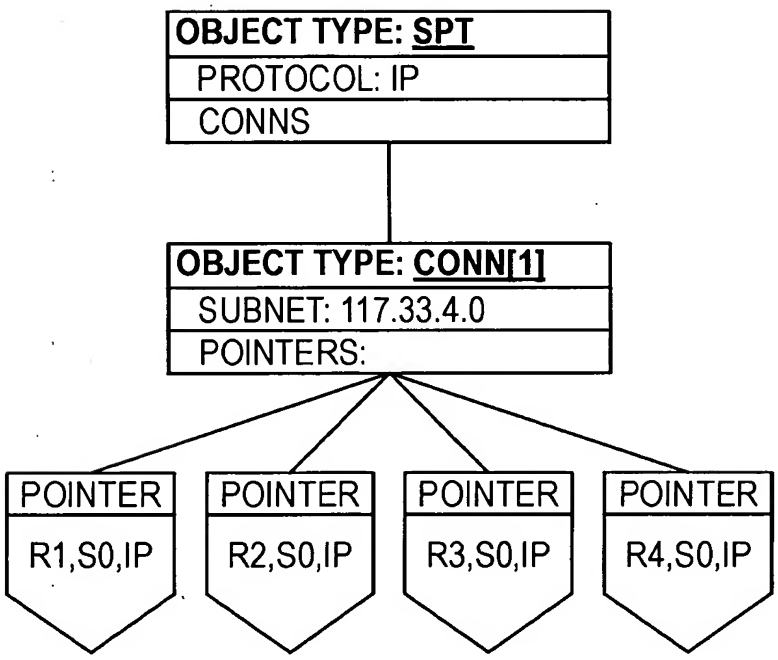


FIG. 35

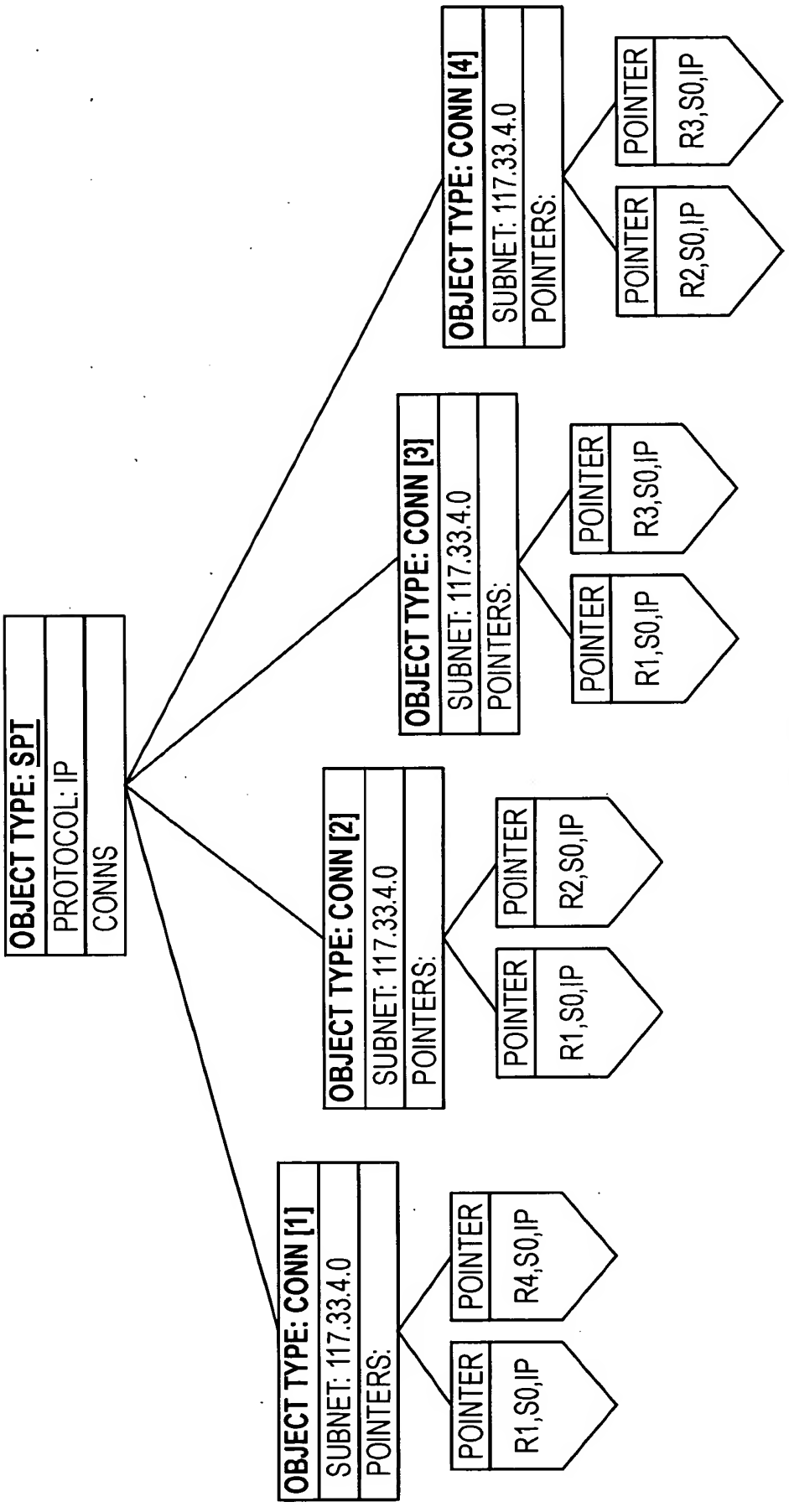


FIG. 36

20020050847007

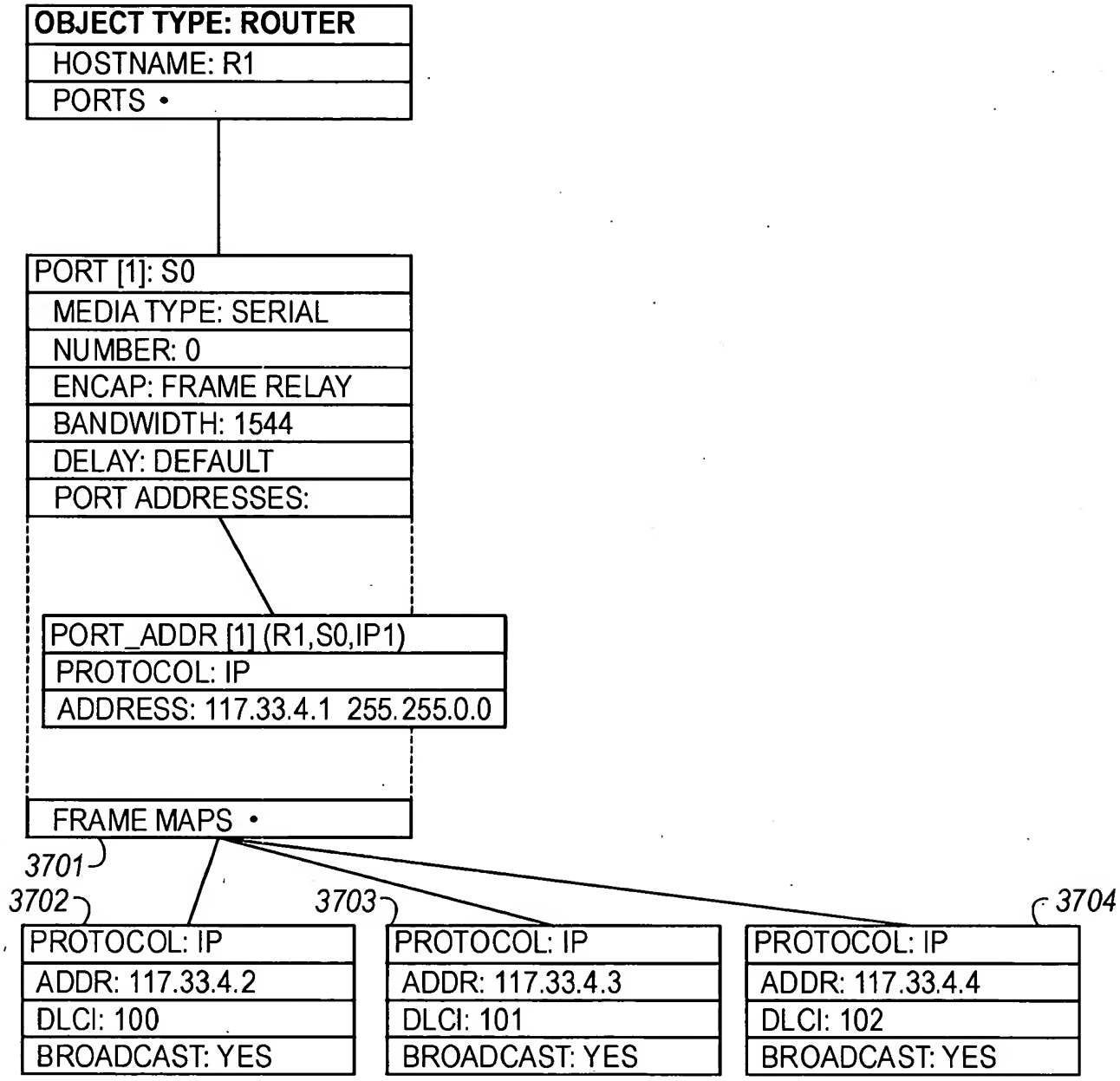

OBJECT TYPE: ROUTER
HOSTNAME: R1
PORTS •
PORT [1]: S0
MEDIA TYPE: SERIAL
NUMBER: 0
ENCAP: FRAME RELAY
BANDWIDTH: 1544
DELAY: DEFAULT
PORT ADDRESSES:
PORT_ADDR [1] (R1,S0,IP1)
PROTOCOL: IP
ADDRESS: 117.33.4.1 255.255.0.0
FRAME MAPS •
3701
3702
3703
3704
PROTOCOL: IP
ADDR: 117.33.4.2
DLCI: 100
BROADCAST: YES
PROTOCOL: IP
ADDR: 117.33.4.3
DLCI: 101
BROADCAST: YES
PROTOCOL: IP
ADDR: 117.33.4.4
DLCI: 102
BROADCAST: YES

FIG. 37

3801

```
VERSION 10.0
!
HOSTNAME R1
!
IP SUBNET-ZERO
!
INTERFACE SERIAL0
DESCRIPTION SERIAL 0
ENCAPSULATION FRAME-RELAY
IP ADDRESS 117.33.4.1  255.255.0.0
FRAME RELAY MAP IP 117.33.4.2 100 BROADCAST
FRAME RELAY MAP IP 117.33.4.3 101 BROADCAST
FRAME RELAY MAP IP 117.33.4.4 102 BROADCAST
!
ROUTER RIP 109
NETWORK 117.33.0.0
END
```

FIG. 38A

3803

```
VERSION 10.0
!
HOSTNAME R2
!
IP SUBNET-ZERO
!
INTERFACE SERIAL0
DESCRIPTION SERIAL 0
ENCAPSULATION FRAME-RELAY
IP ADDRESS 117.33.4.1  255.255.0.0
FRAME RELAY MAP IP 117.33.4.1 100 BROADCAST
FRAME RELAY MAP IP 117.33.4.3 101 BROADCAST
!
ROUTER RIP 109
NETWORK 117.33.0.0
END
```

FIG. 38B

20050047 "20050504"

```
VERSION 10.0
!
HOSTNAME R3
!
IP SUBNET-ZERO
!
INTERFACE SERIAL0
DESCRIPTION SERIAL 0
ENCAPSULATION FRAME-RELAY
IP ADDRESS 117.33.4.1  255.255.0.0
FRAME RELAY MAP IP 117.33.4.1 100 BROADCAST
FRAME RELAY MAP IP 117.33.4.2 101 BROADCAST
!
ROUTER RIP 109
NETWORK 117.33.0.0
END
```

FIG. 38C

```
VERSION 10.0
!
HOSTNAME R4
!
IP SUBNET-ZERO
!
INTERFACE SERIAL0
DESCRIPTION SERIAL 0
ENCAPSULATION FRAME-RELAY
IP ADDRESS 117.33.4.1  255.255.0.0
FRAME RELAY MAP IP 117.33.4.1 100 BROADCAST
!
ROUTER RIP 109
NETWORK 117.33.0.0
END
```

FIG. 38D

20021202-0074805

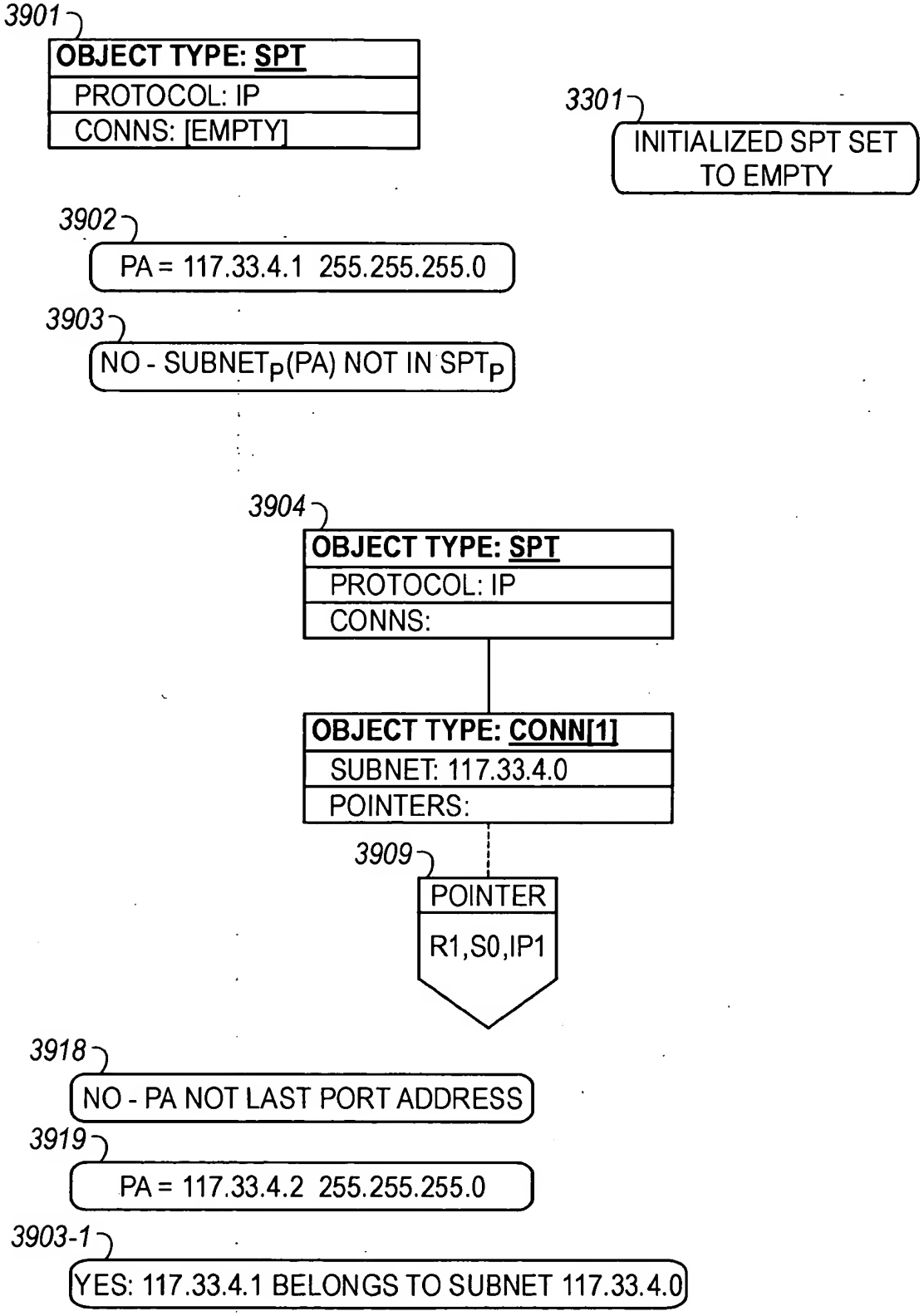


FIG. 39A

EL652871260US

10074805 "021202

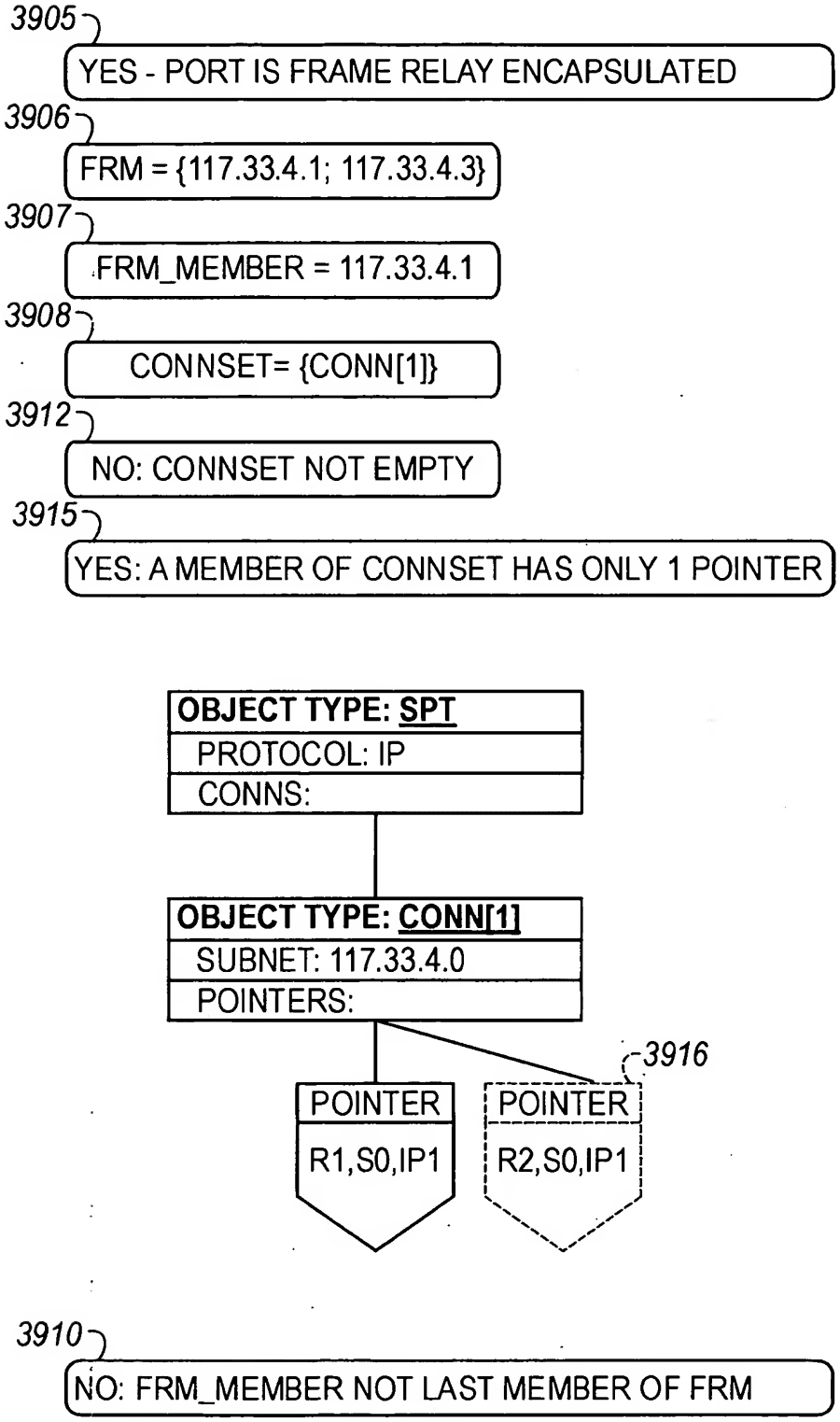


FIG. 39B

20020150494.001

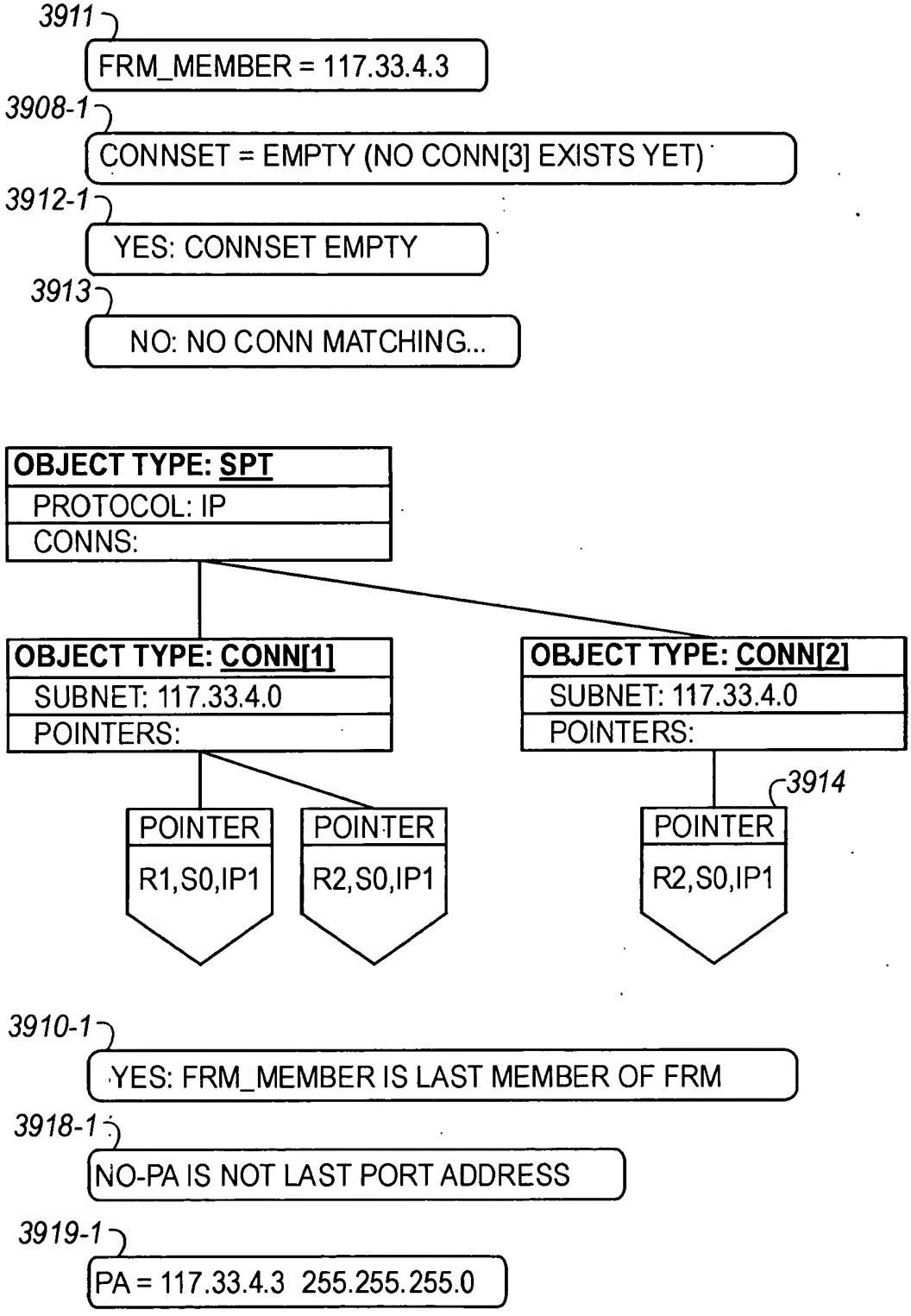


FIG. 39C

10007498v1 020717

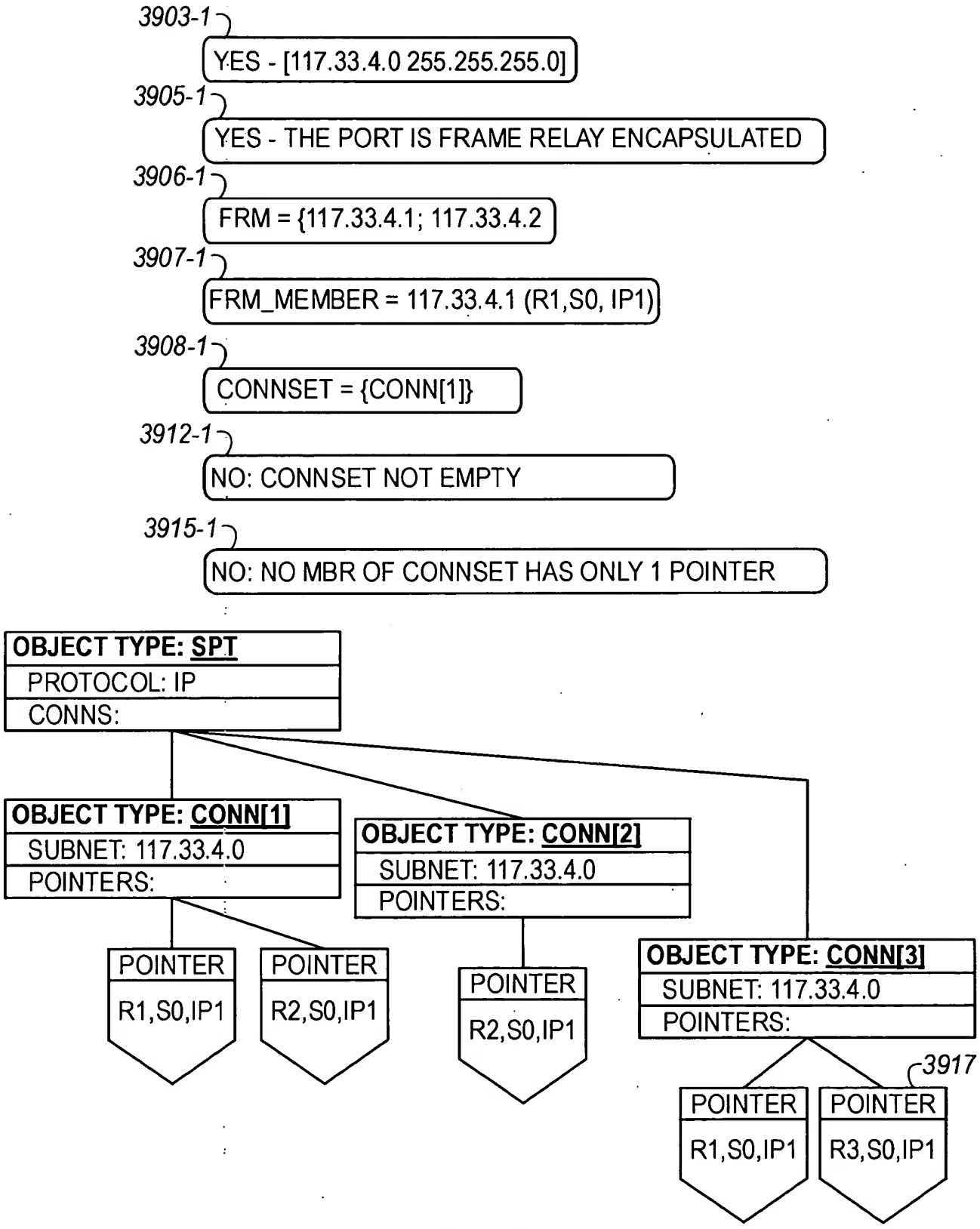


FIG. 39D

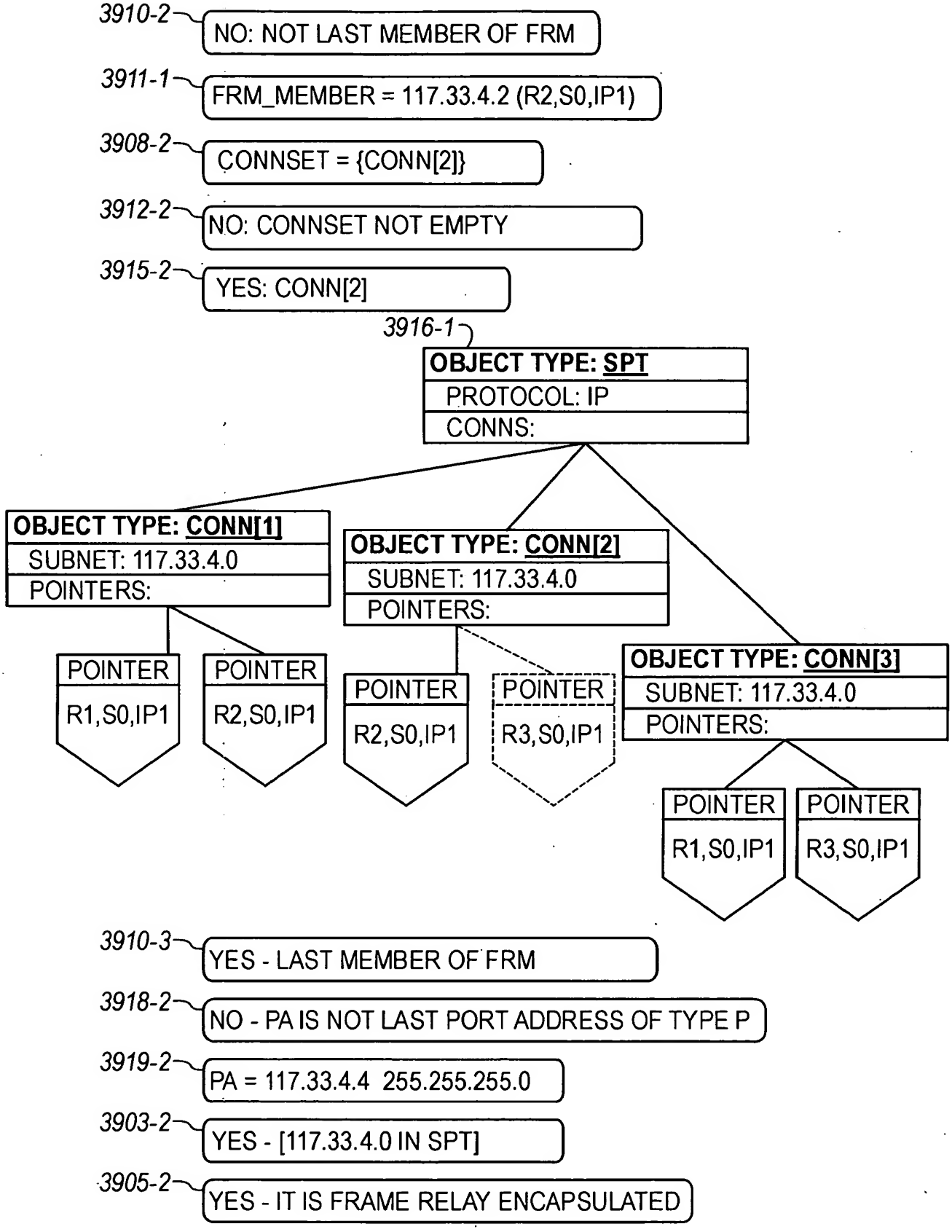


FIG. 39E

100/48005 - 0021202

Title: Method of Resolving Conflicts in Access Control Lists...
Inventor(s): R. N. Pelavin, et al.
Express Mail Label No. EL652871260U ket No. 50325-0630

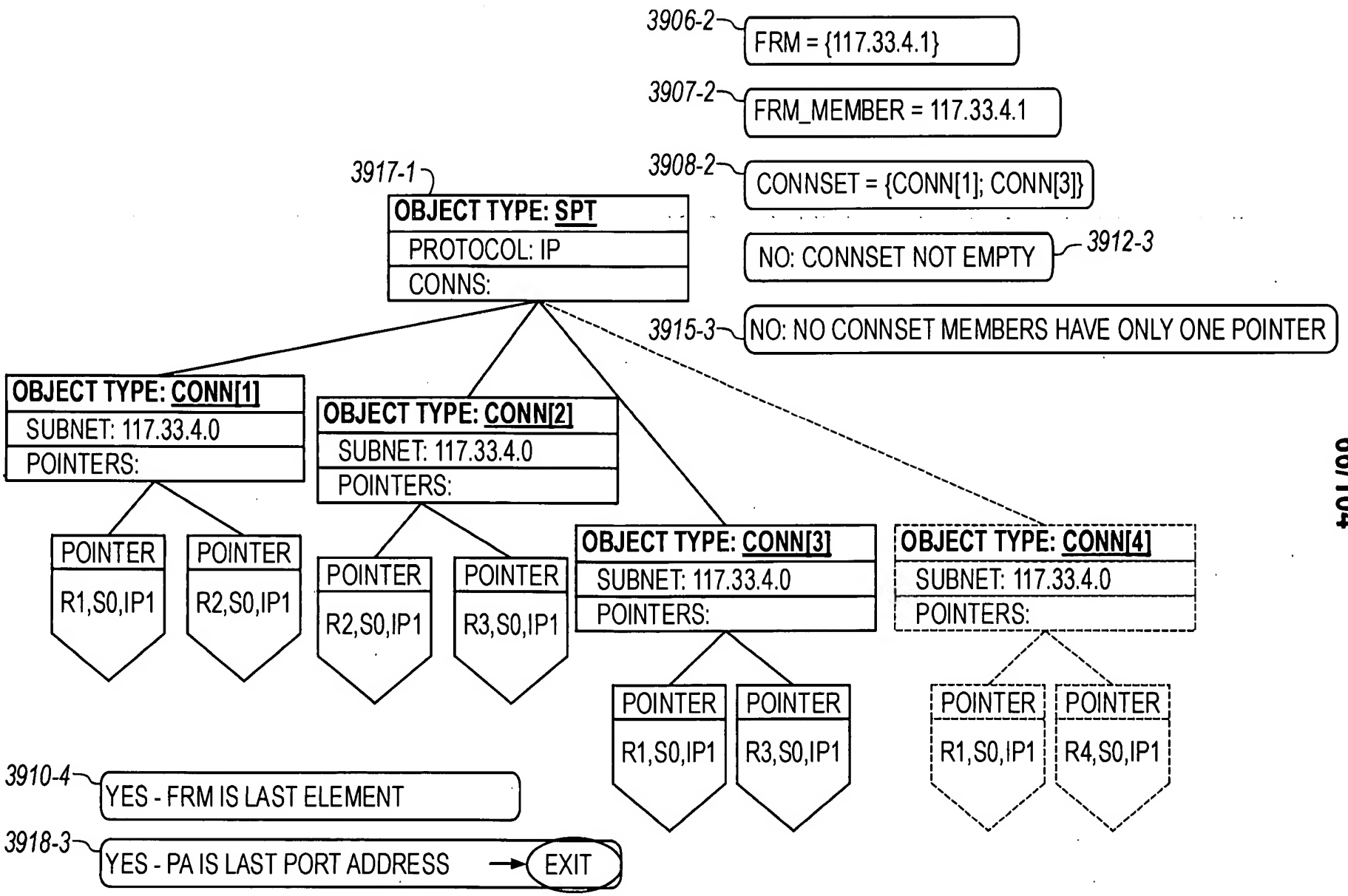


FIG. 39F

20220"5084200T

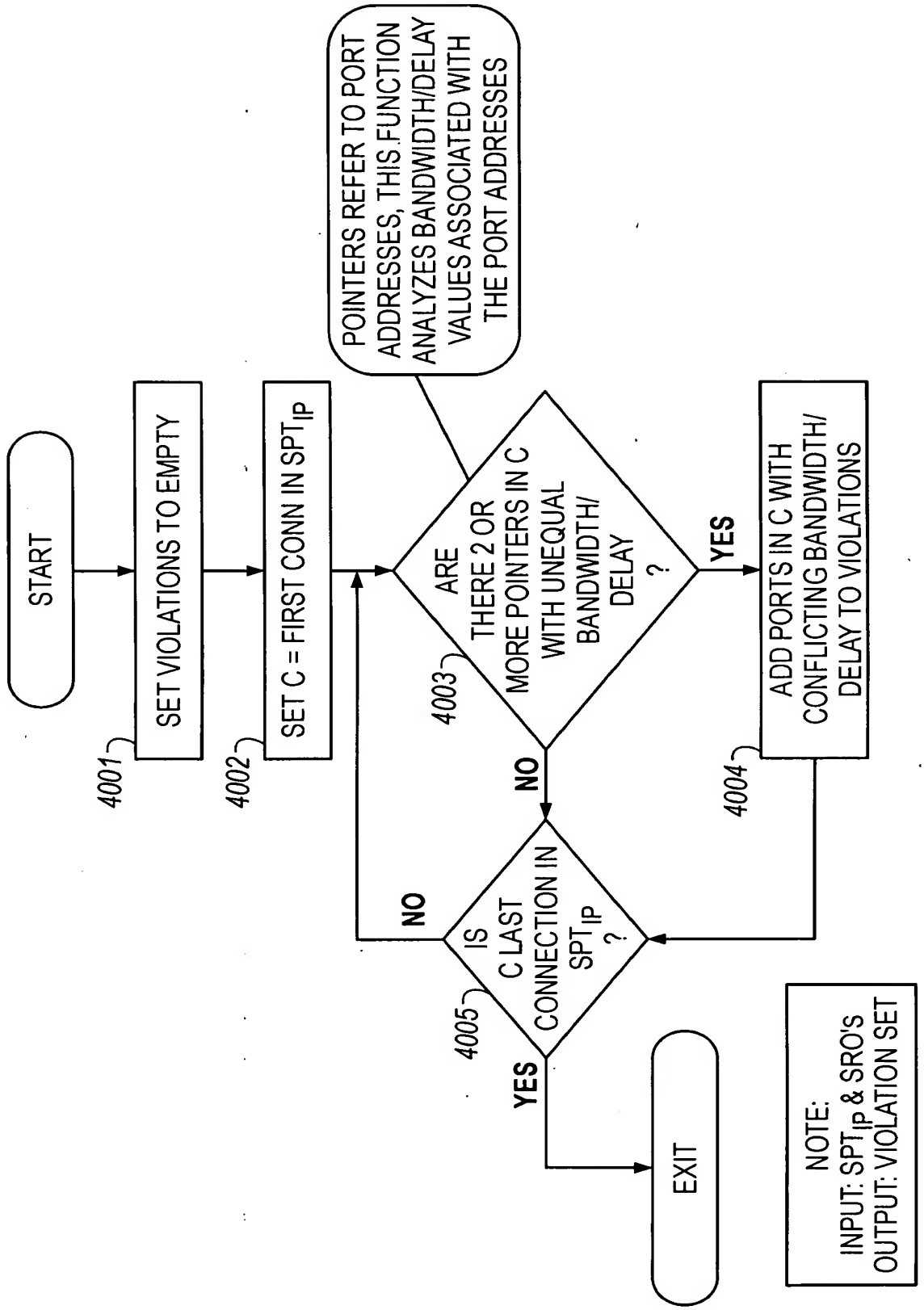


FIG. 40

EL652871260US

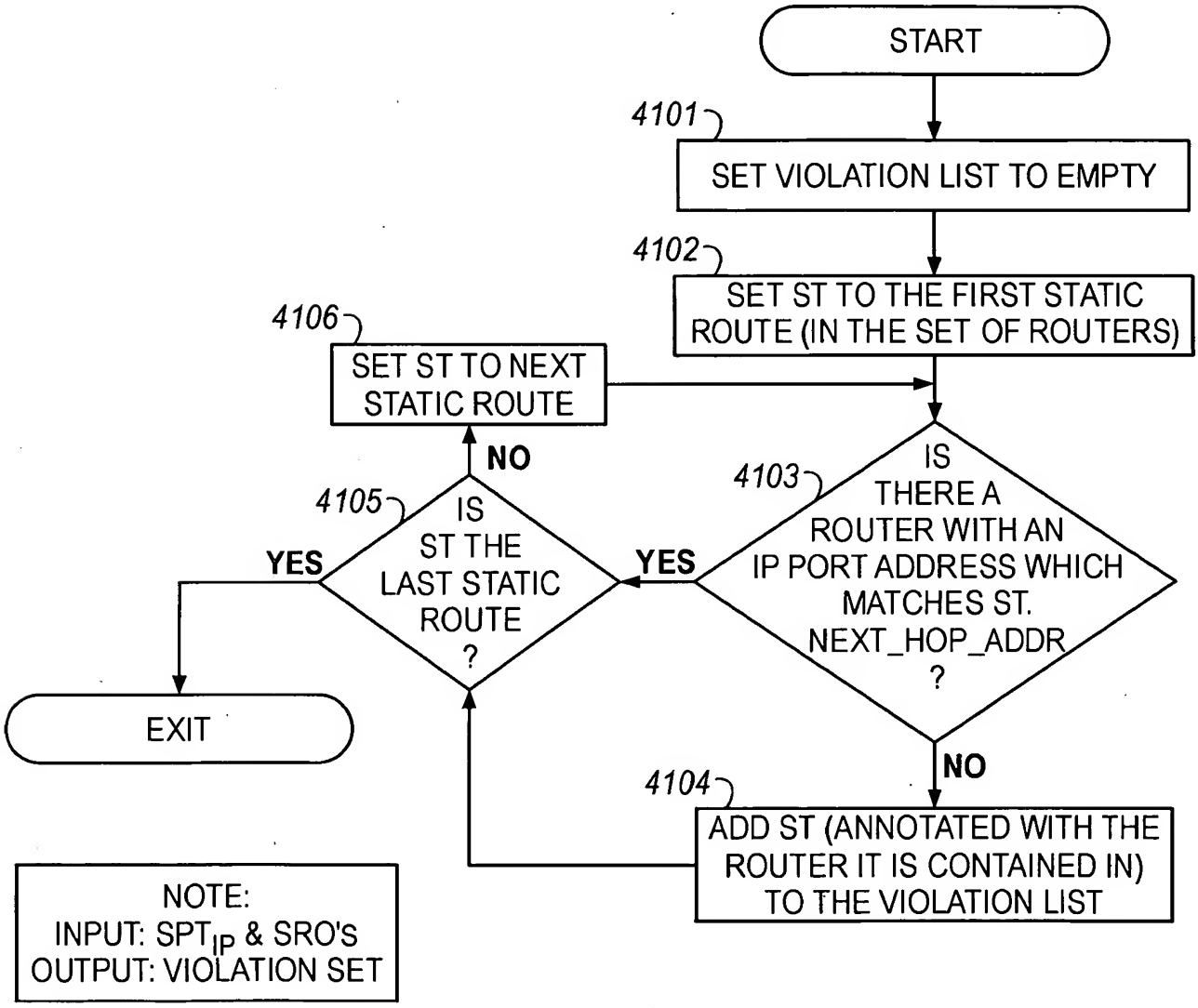


FIG. 41

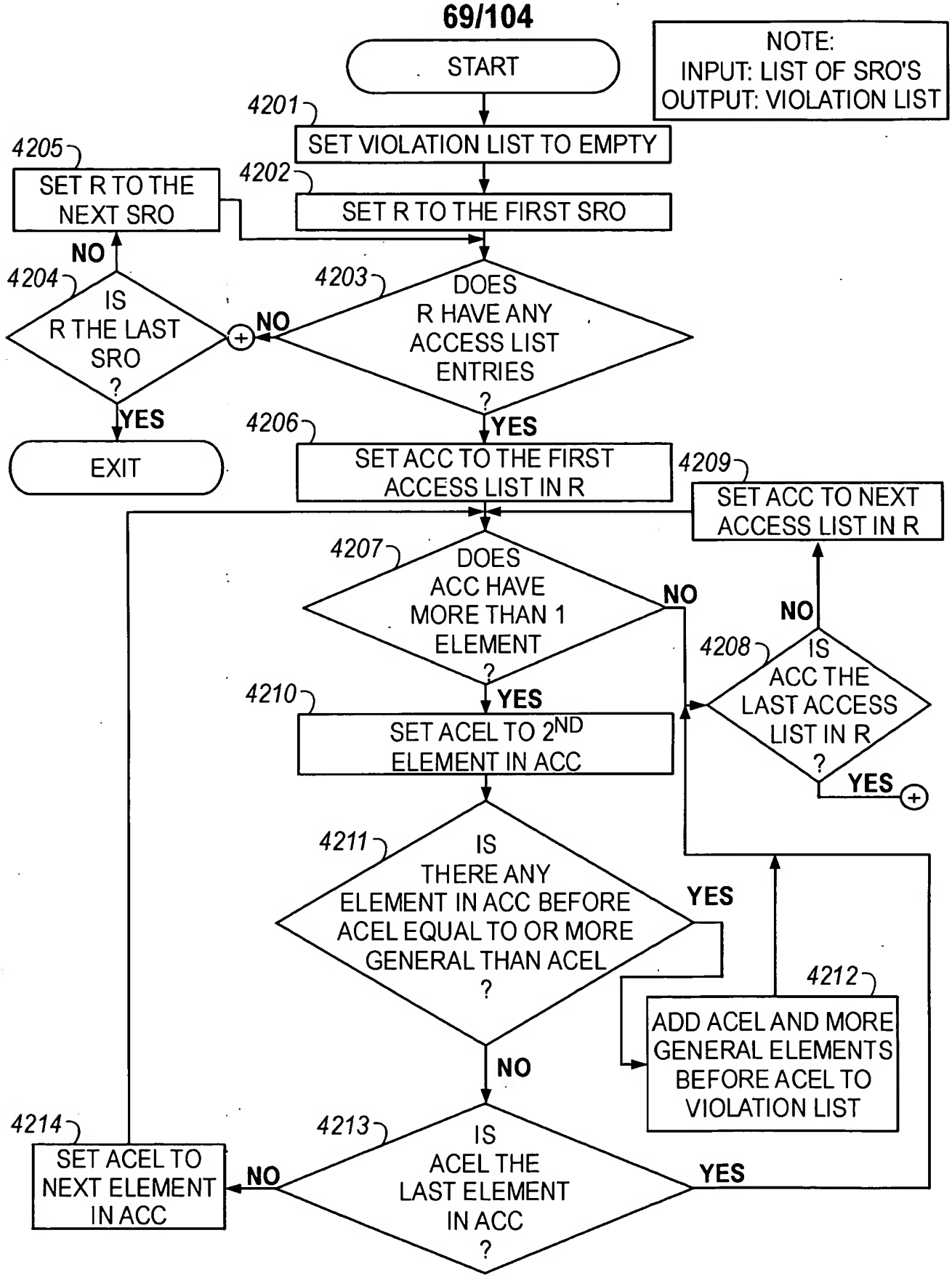


FIG. 42

4005,4805,4820,4825

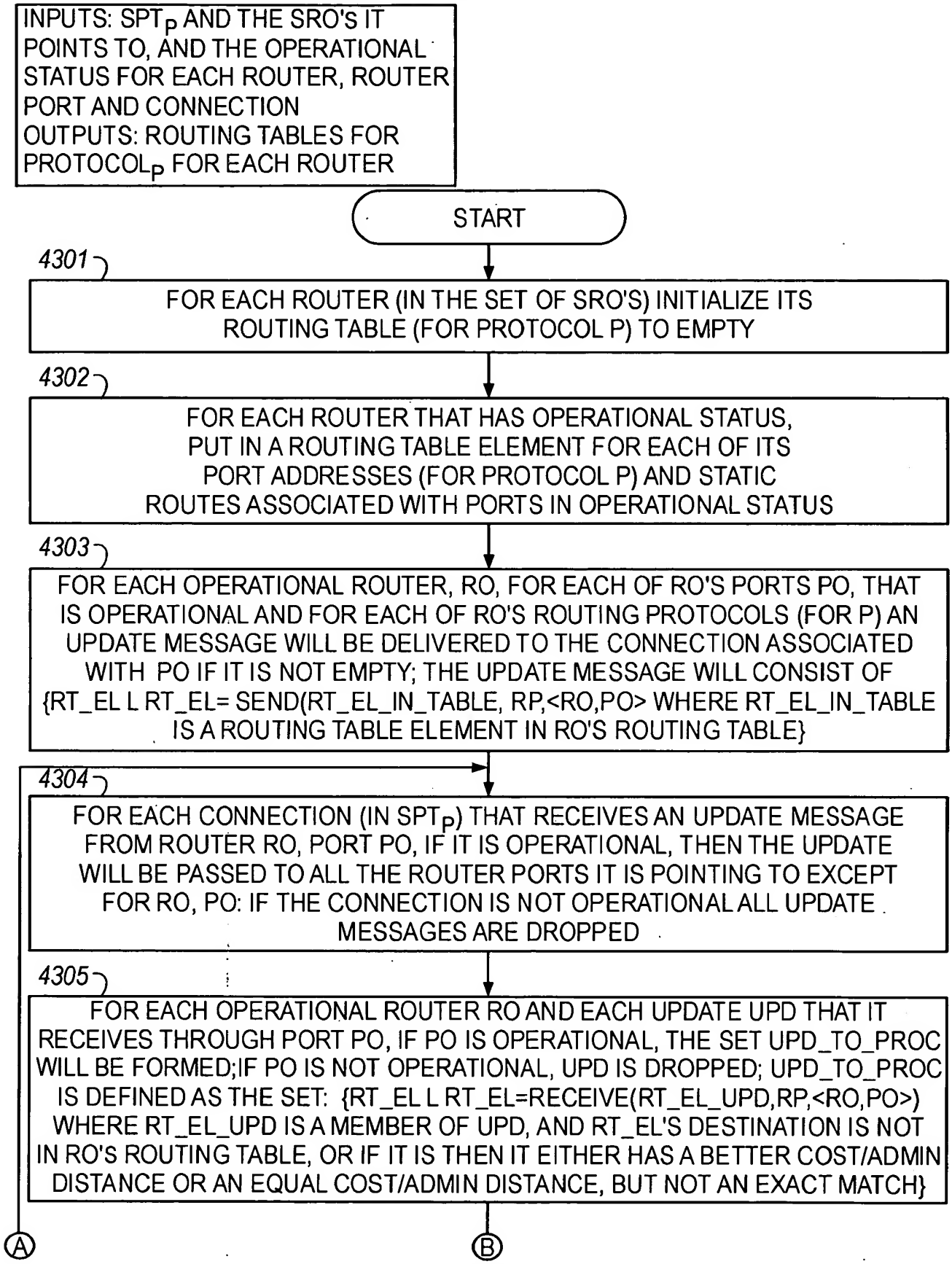


FIG. 43A

10074805.021202

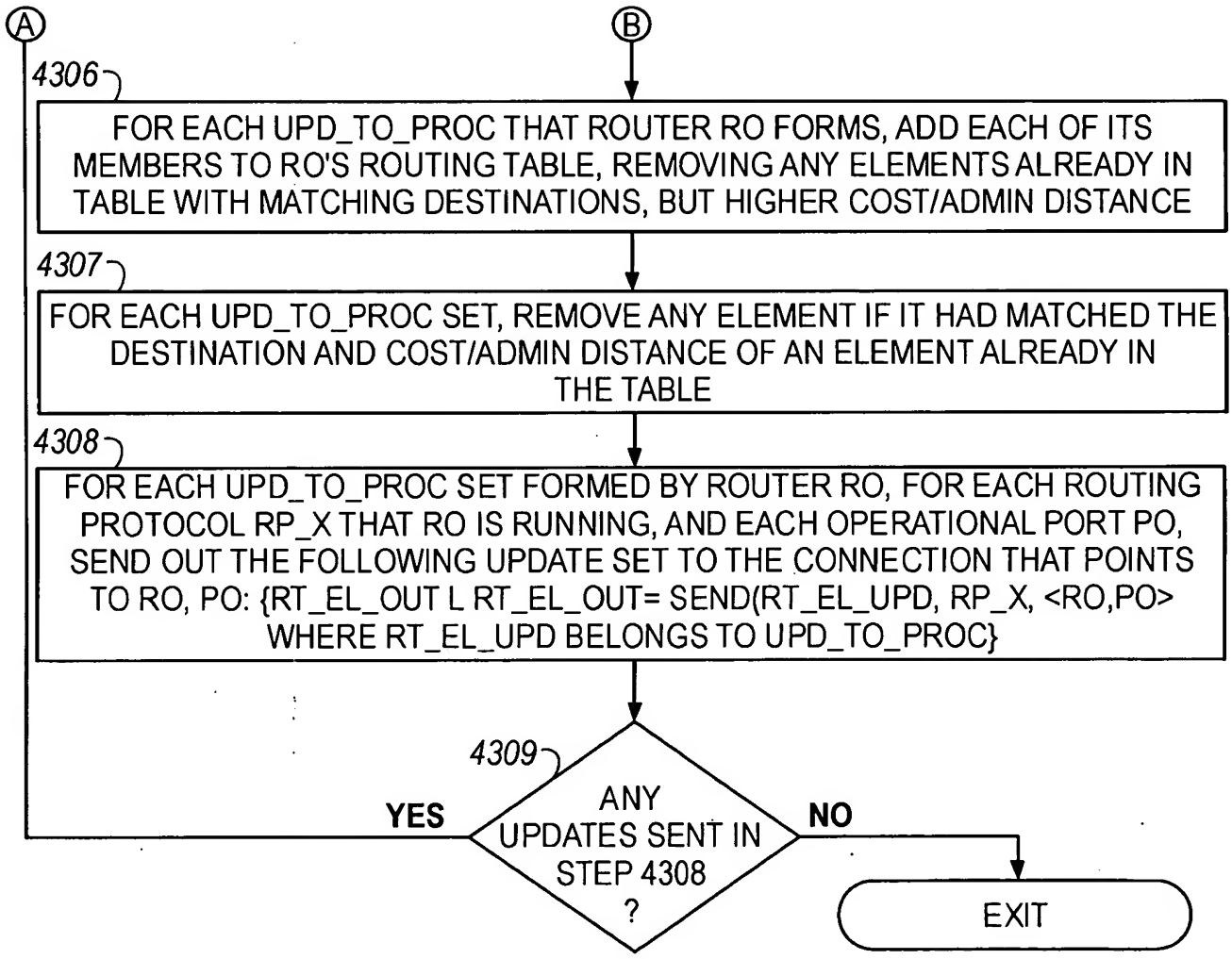

A
B
4306
FOR EACH UPD_TO_PROC THAT ROUTER RO FORMS, ADD EACH OF ITS MEMBERS TO RO'S ROUTING TABLE, REMOVING ANY ELEMENTS ALREADY IN TABLE WITH MATCHING DESTINATIONS, BUT HIGHER COST/ADMIN DISTANCE
4307
FOR EACH UPD_TO_PROC SET, REMOVE ANY ELEMENT IF IT HAD MATCHED THE DESTINATION AND COST/ADMIN DISTANCE OF AN ELEMENT ALREADY IN THE TABLE
4308
FOR EACH UPD_TO_PROC SET FORMED BY ROUTER RO, FOR EACH ROUTING PROTOCOL RP_X THAT RO IS RUNNING, AND EACH OPERATIONAL PORT PO, SEND OUT THE FOLLOWING UPDATE SET TO THE CONNECTION THAT POINTS TO RO, PO: {RT_EL_OUT L RT_EL_OUT= SEND(RT_EL_UPD, RP_X, <RO,PO> WHERE RT_EL_UPD BELONGS TO UPD_TO_PROC}
4309
ANY UPDATES SENT IN STEP 4308 ?
YES
NO
EXIT

FIG. 43B

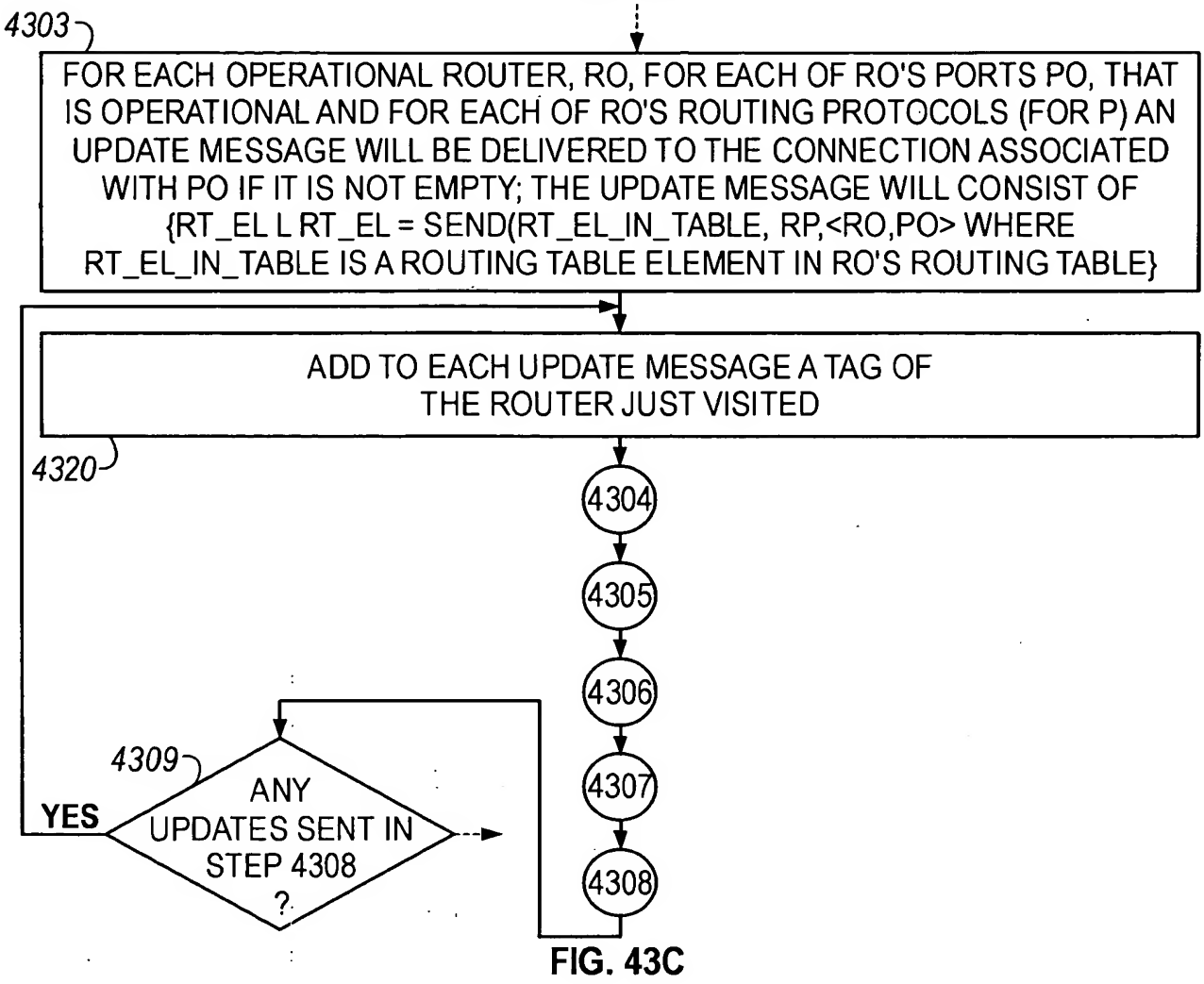


FIG. 43C

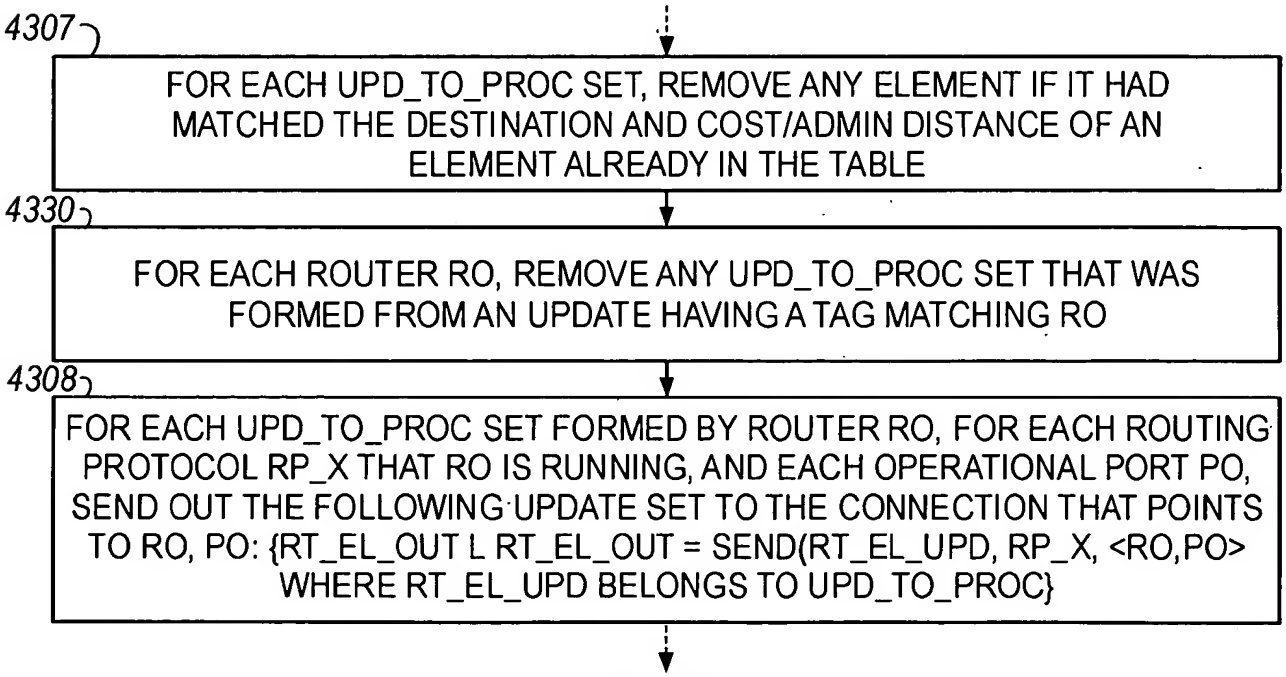


FIG. 43D

10074805.020202

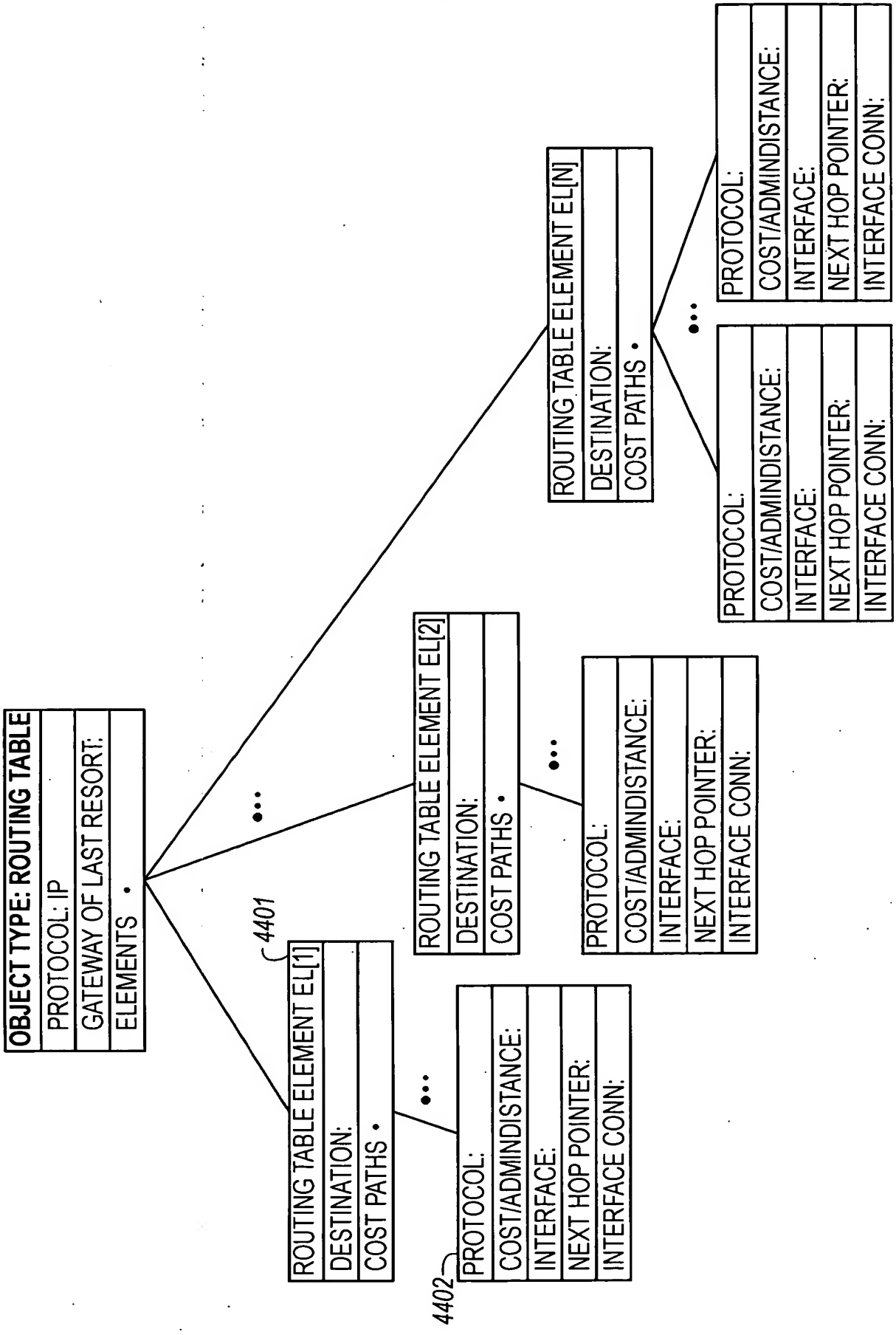
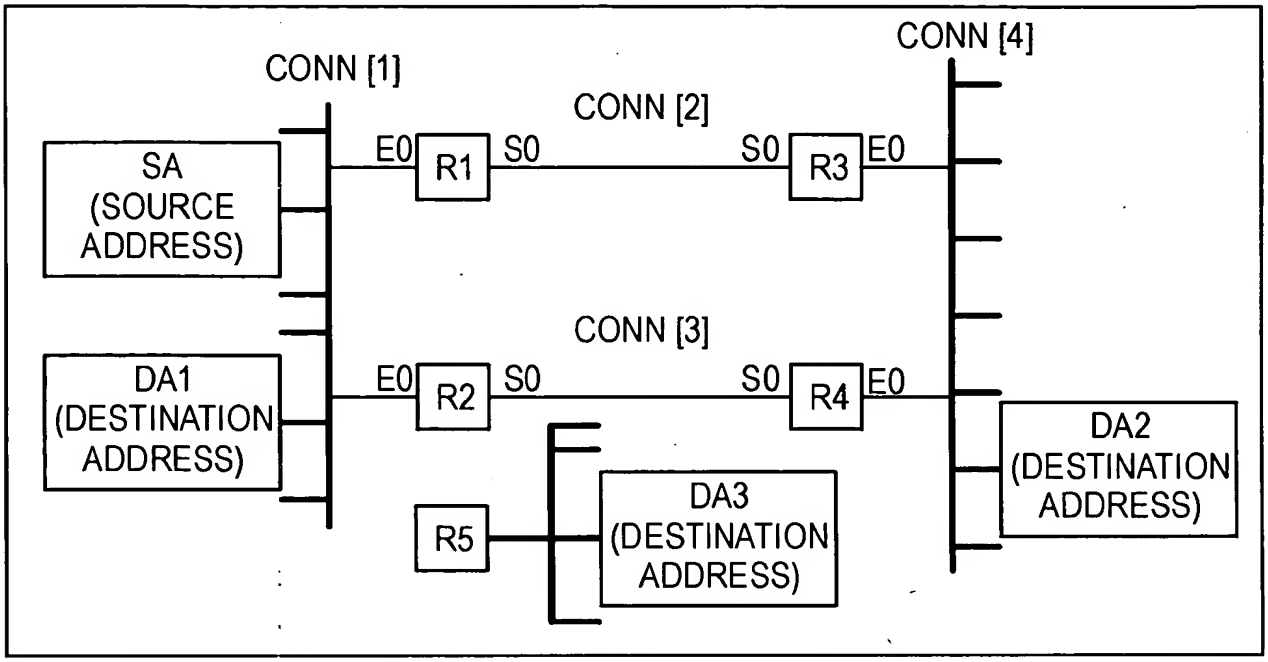

OBJECT TYPE: ROUTING TABLE
PROTOCOL: IP
GATEWAY OF LAST RESORT:
ELEMENTS •
4401
ROUTING TABLE ELEMENT EL[1]
DESTINATION:
COST PATHS •
4402
PROTOCOL:
COST/ADMINDISTANCE:
INTERFACE:
NEXT HOP POINTER:
INTERFACE CONN:
ROUTING TABLE ELEMENT EL[2]
DESTINATION:
COST PATHS •
PROTOCOL:
COST/ADMINDISTANCE:
INTERFACE:
NEXT HOP POINTER:
INTERFACE CONN:
ROUTING TABLE ELEMENT EL[N]
DESTINATION:
COST PATHS •
PROTOCOL:
COST/ADMINDISTANCE:
INTERFACE:
NEXT HOP POINTER:
INTERFACE CONN:
PROTOCOL:
COST/ADMINDISTANCE:
INTERFACE:
NEXT HOP POINTER:
INTERFACE CONN:

FIG. 44



DATA LABELS USED IN CPS DISCUSSION

SC	SOURCE CONNECTION
DC	DESTINATION CONNECTION
SA	SOURCE ADDRESS
DA	DESTINATION ADDRESS
CPS	COMPLETED PATH SET
APS	ACTIVE PATH SET
SPT	SINGLE PROTOCOL TOPOLOGY
CR	CURRENT ROUTER
NC	NEW CONNECTION
EL	ROUTING TABLE ELEMENT
P	PROTOCOL
CPO	COST PATH OBJECT

DEFINITION: COMPLETED PATH SET - CPS

THE SET HAVING: NO ELEMENTS; 1 ELEMENT; OR, MORE THAN 1 ELEMENT

NO ELEMENTS MEANS: NO PATH FROM SA TO DA
ONE (1) ELEMENT MEANS: ONE PATH FROM SA TO DA
MORE THAN ONE ELEMENT: MULTIPLE PATHS FROM SA TO DA

THE CPS FOR SA TO DA2 LOOKS LIKE:
{[SA;CONN[1];R1;CONN[2];R3;CONN[4];DA2]
[SA;CONN[1];R2;CONN[3];R4;CONN[4]DA2]}

THE CPS FOR SA TO DA1 LOOKS LIKE:
{[SA;CONN[1];DA1]}

THE CPS FOR SA TO DA3 LOOKS LIKE:
{}

FIG. 45

1007480S-021202

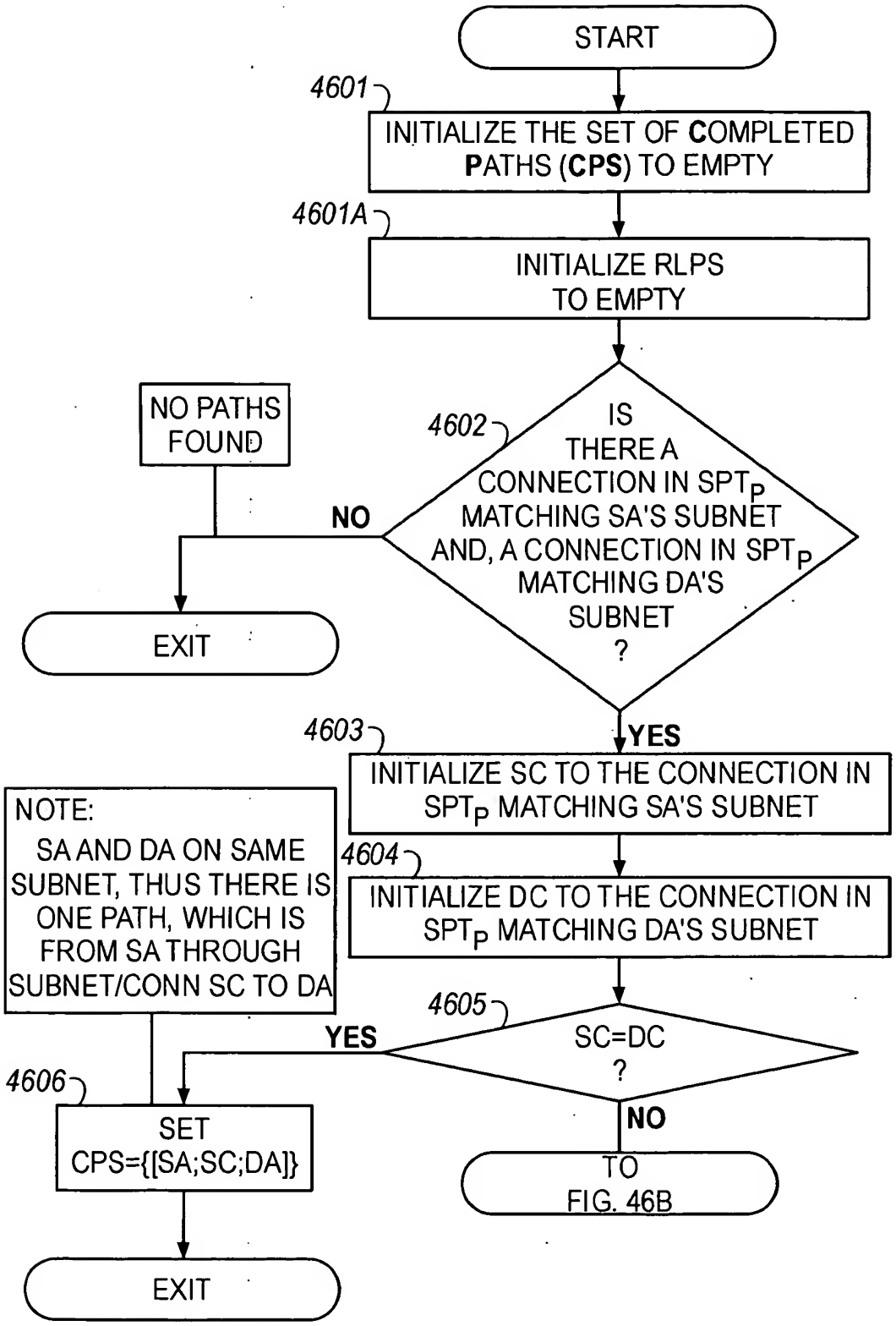

START
4601
INITIALIZE THE SET OF COMPLETED PATHS (CPS) TO EMPTY
4601A
INITIALIZE RLPS TO EMPTY
4602
IS THERE A CONNECTION IN SPT$_P$ MATCHING SA'S SUBNET AND, A CONNECTION IN SPT$_P$ MATCHING DA'S SUBNET ?
NO
NO PATHS FOUND
EXIT
YES
4603
INITIALIZE SC TO THE CONNECTION IN SPT$_P$ MATCHING SA'S SUBNET
4604
INITIALIZE DC TO THE CONNECTION IN SPT$_P$ MATCHING DA'S SUBNET
4605
SC=DC ?
YES
NO
NOTE:
SA AND DA ON SAME SUBNET, THUS THERE IS ONE PATH, WHICH IS FROM SA THROUGH SUBNET/CONN SC TO DA
4606
SET CPS={[SA;SC;DA]}
EXIT
TO FIG. 46B

FIG. 46A

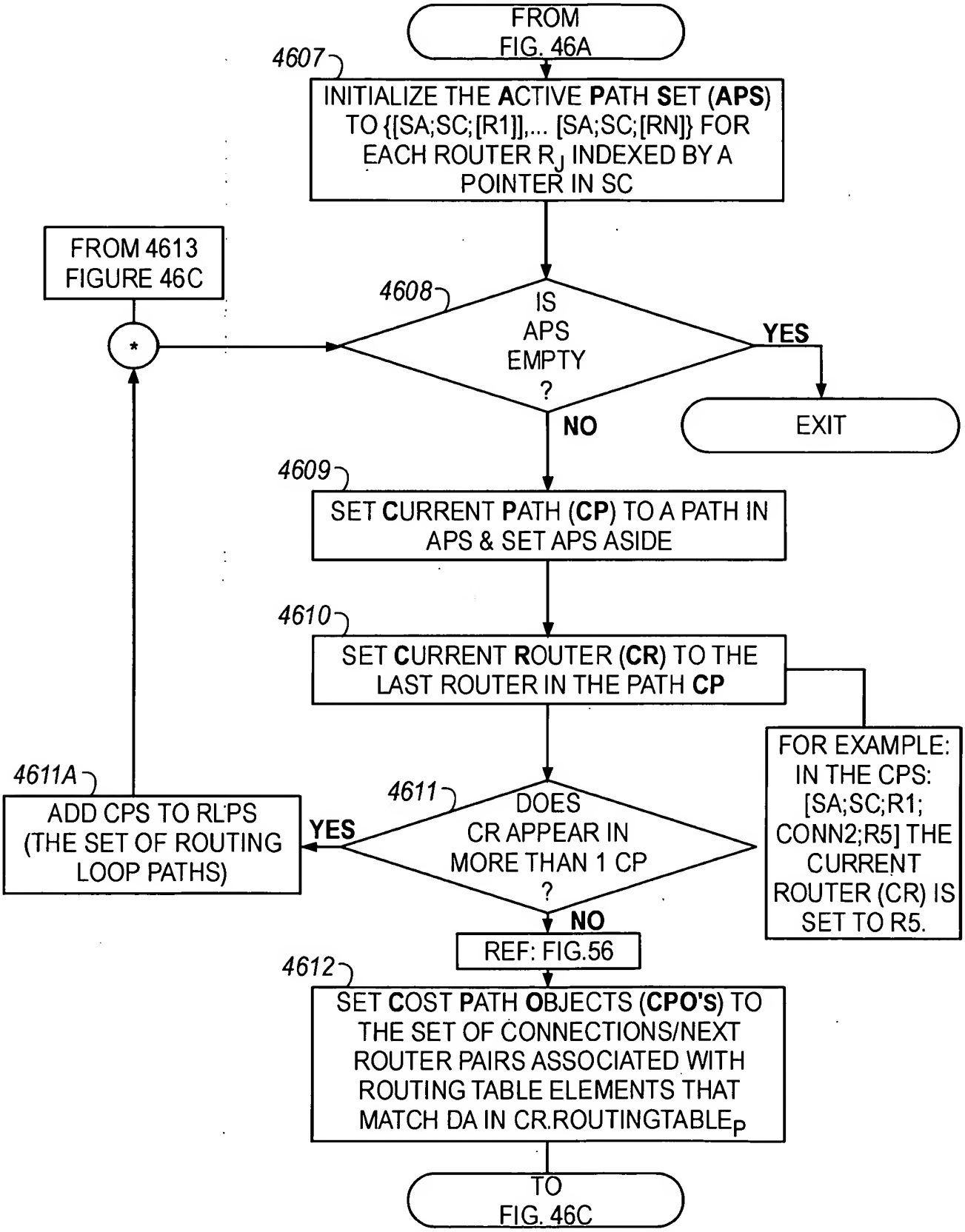


FIG. 46B

Docket No. 50325-0630

50325-0630 EL652871260US

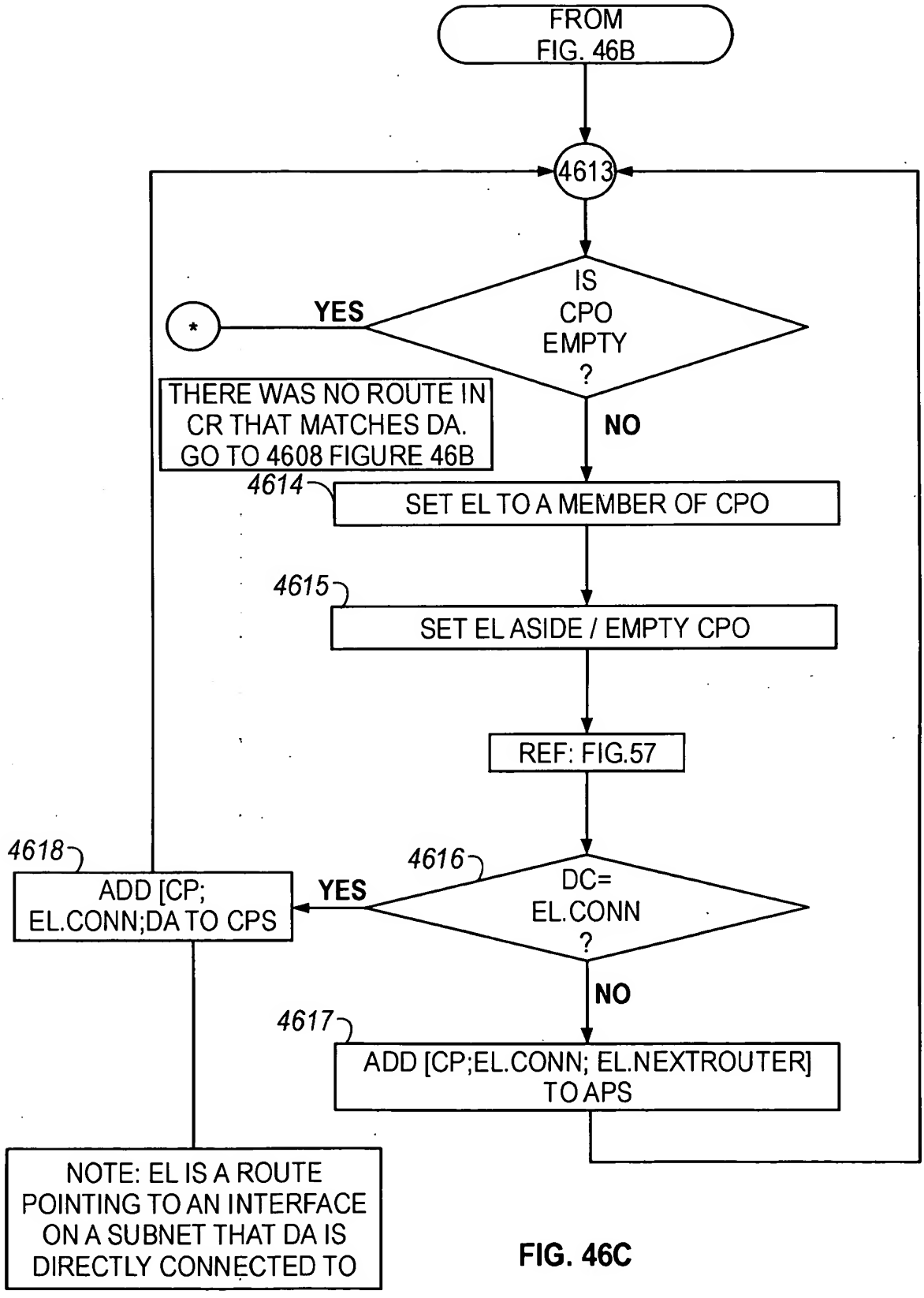


FIG. 46C

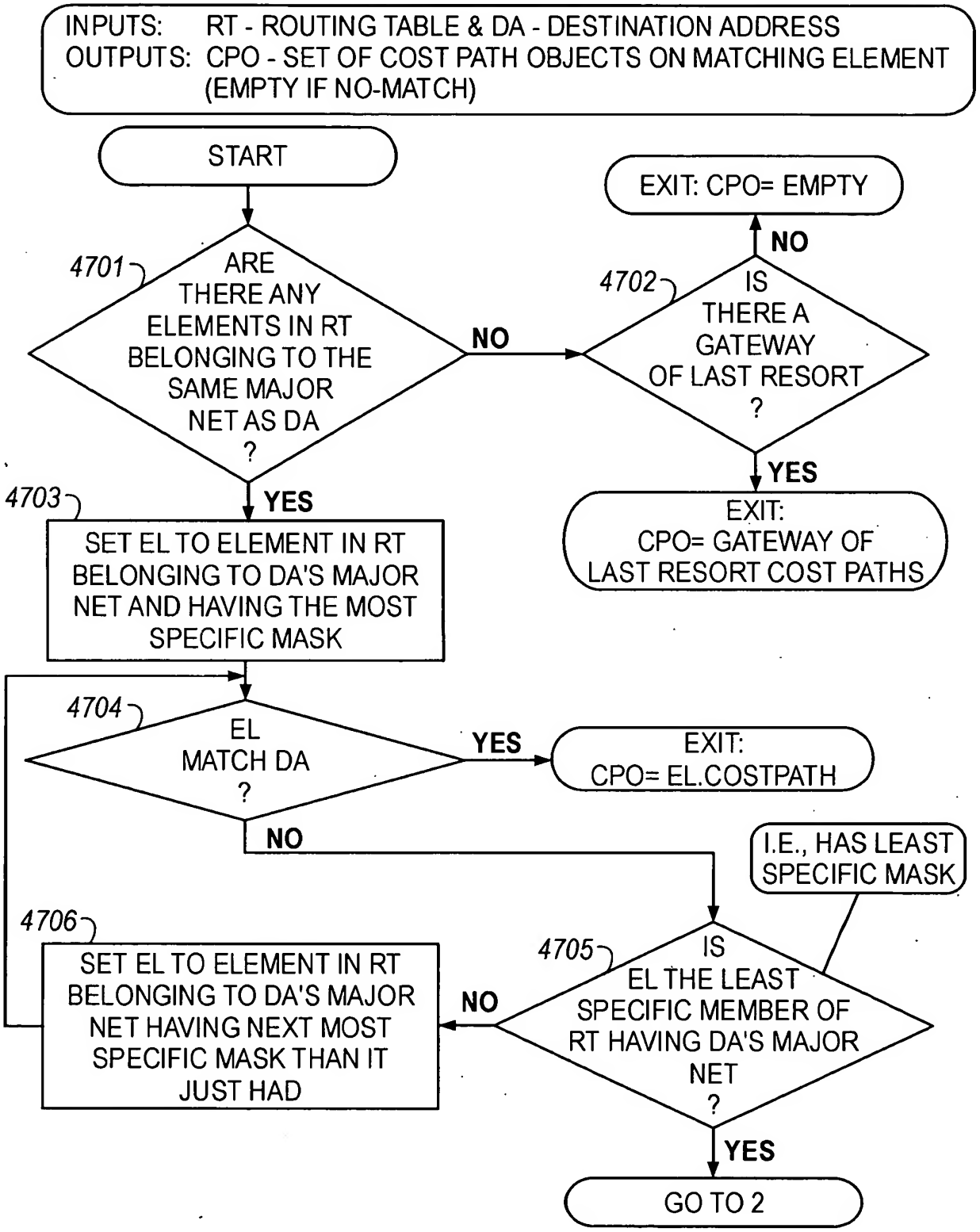


FIG. 47

10074805 "052600

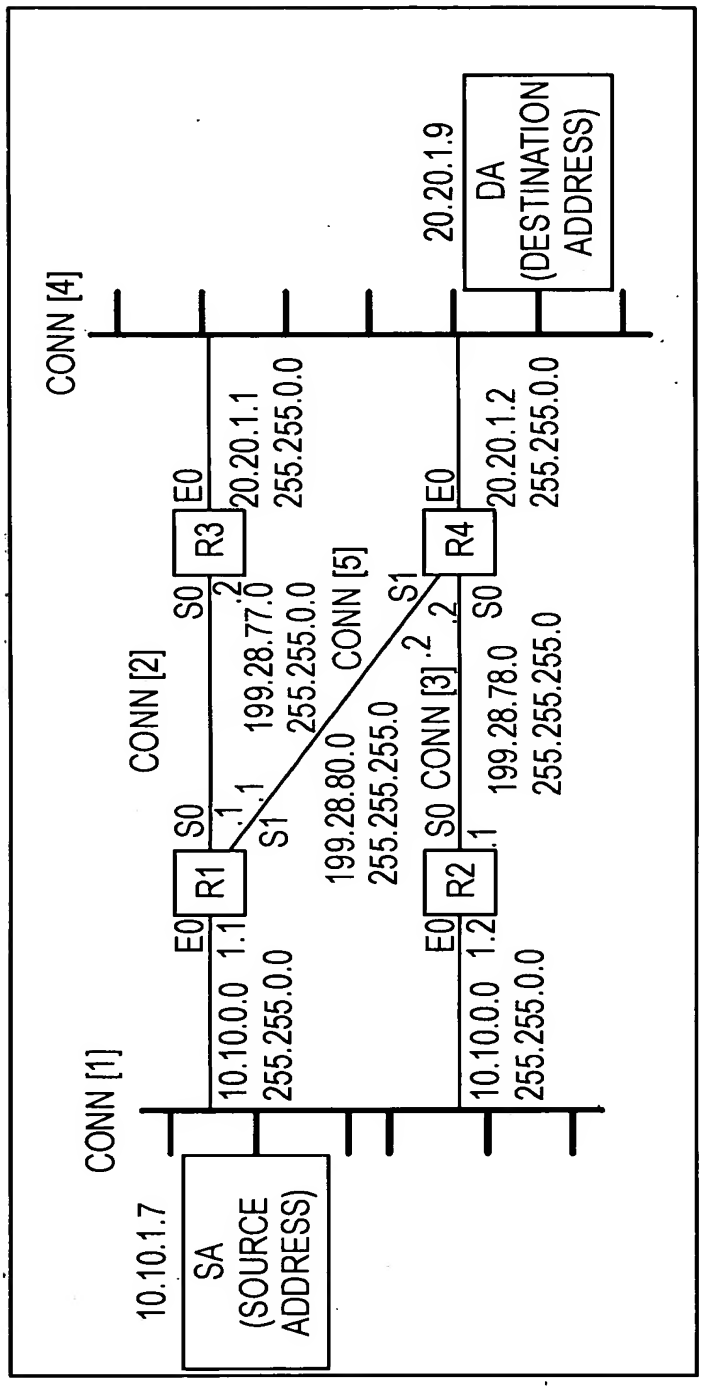


FIG. 48

2627207 "Gb3h2007

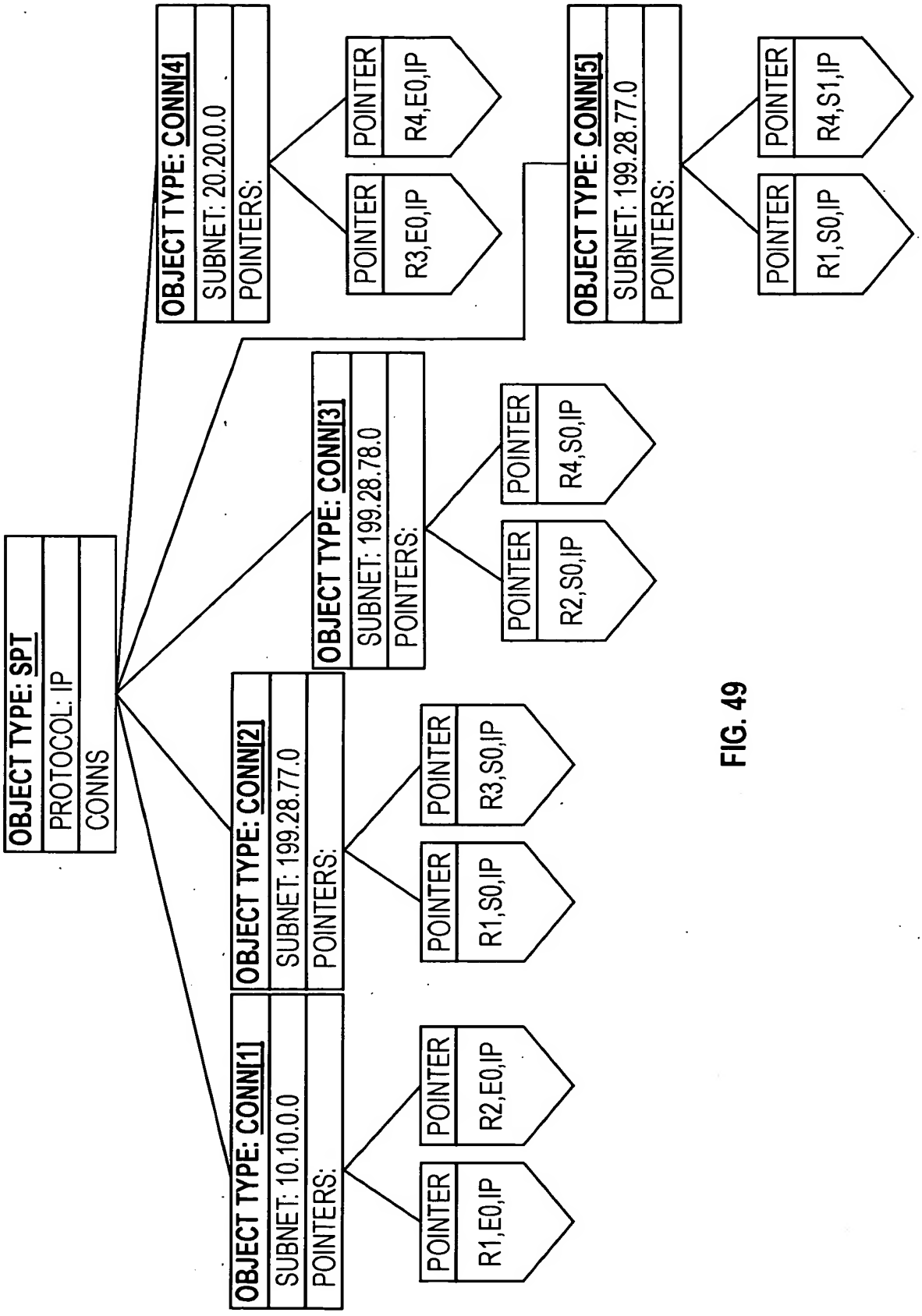


FIG. 49

"Express Mail" 5084207

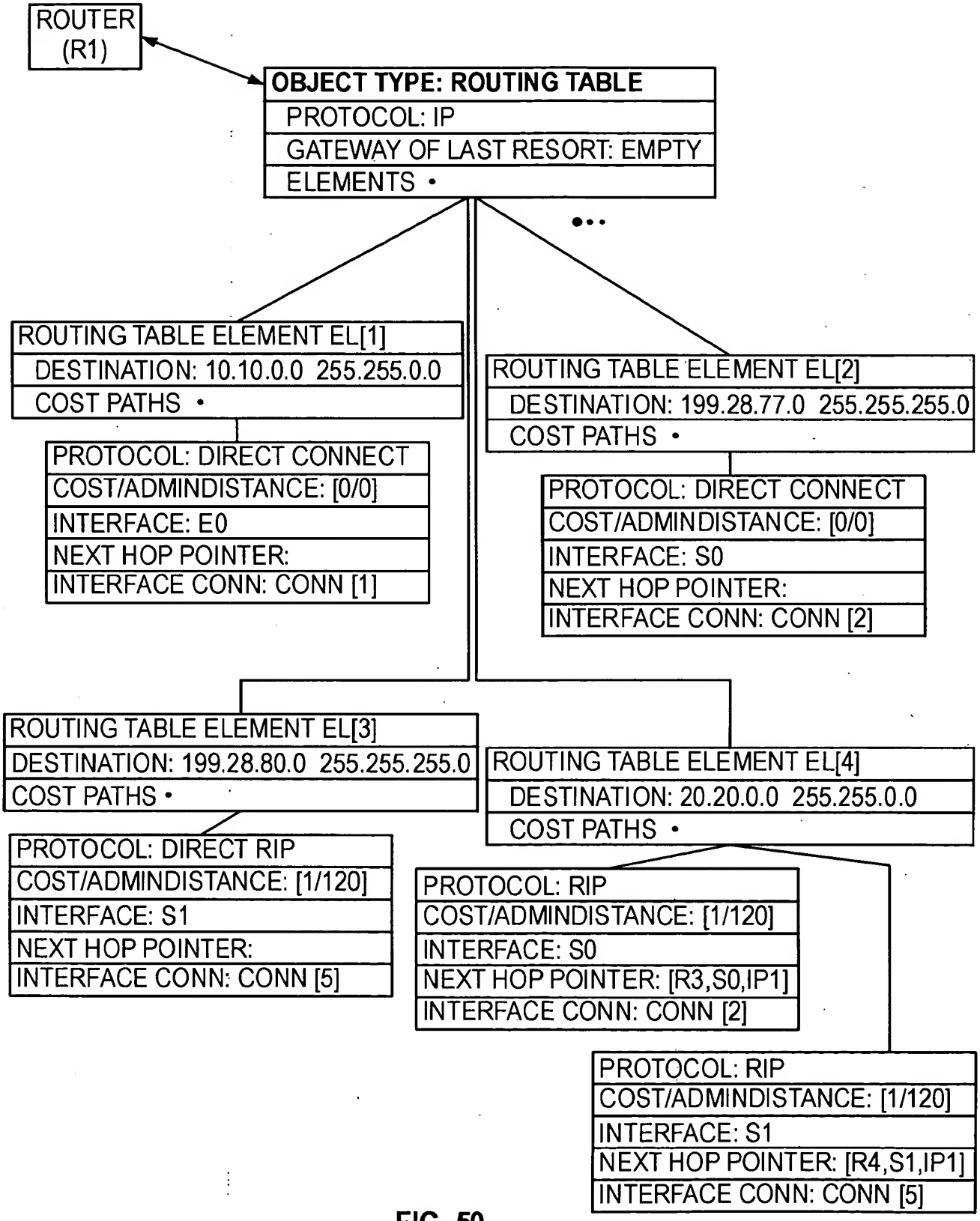


FIG. 50

20120205-0250487001

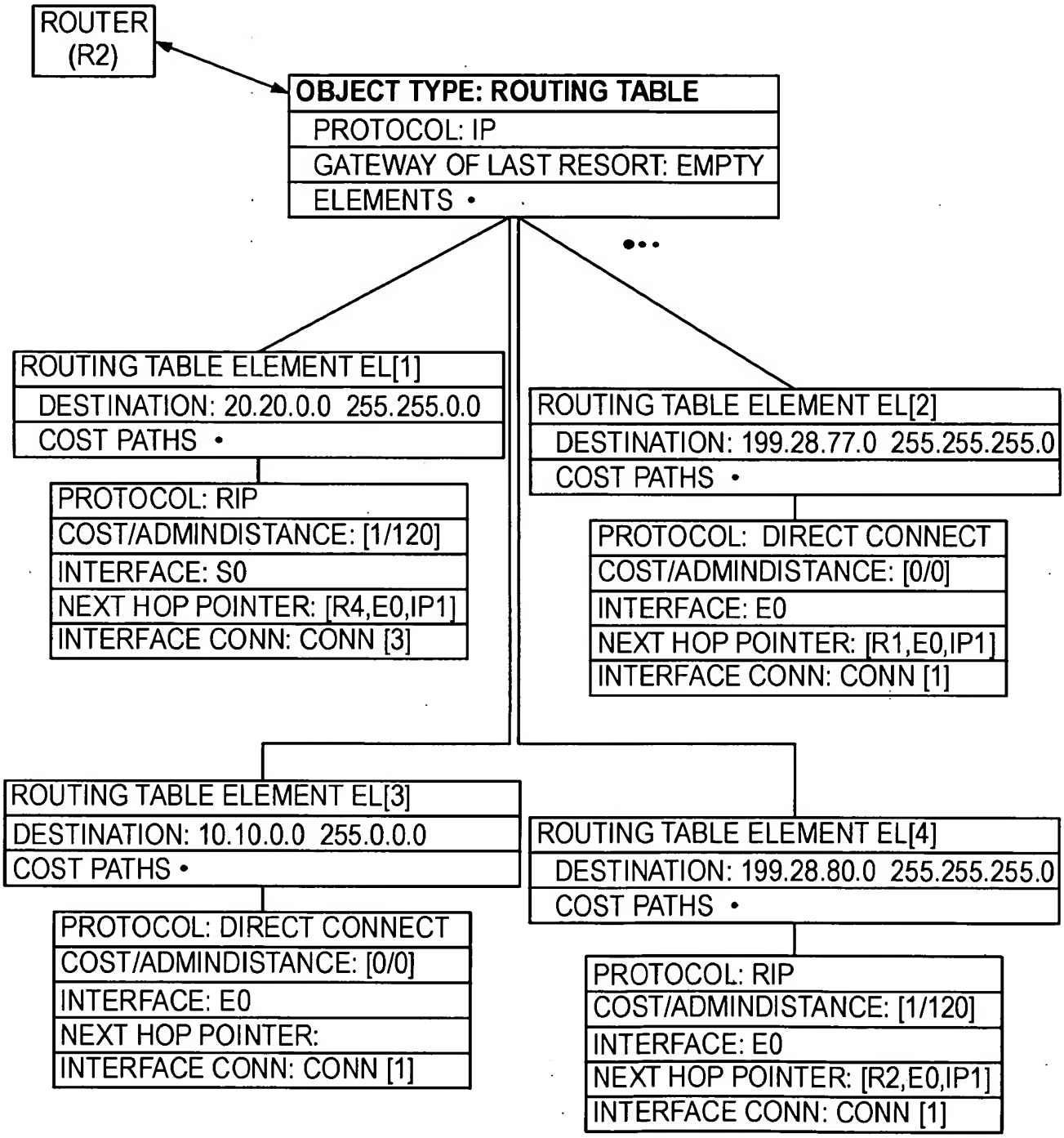


FIG. 51

D07480S "02120Z

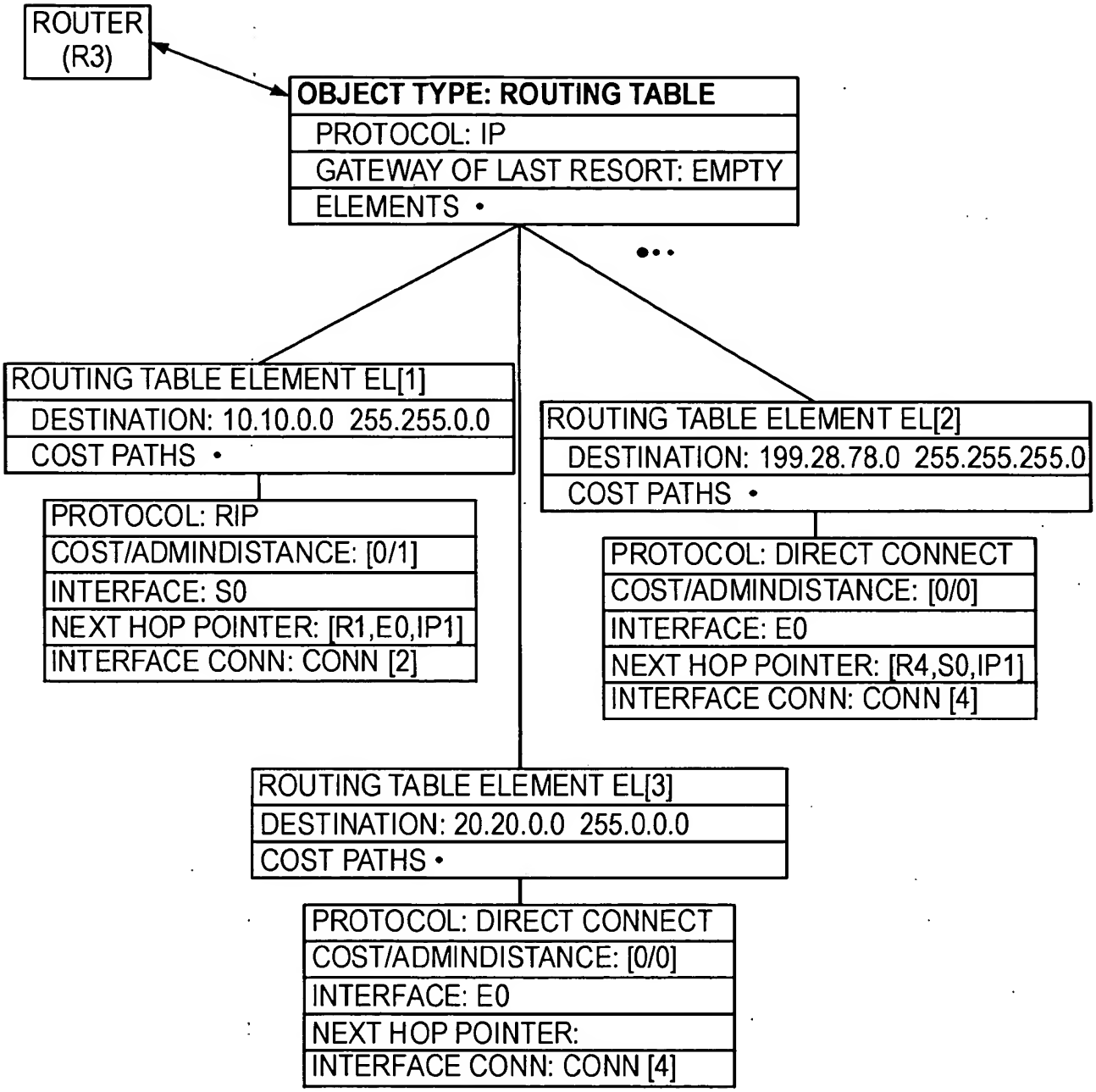


FIG. 52A

20050240701

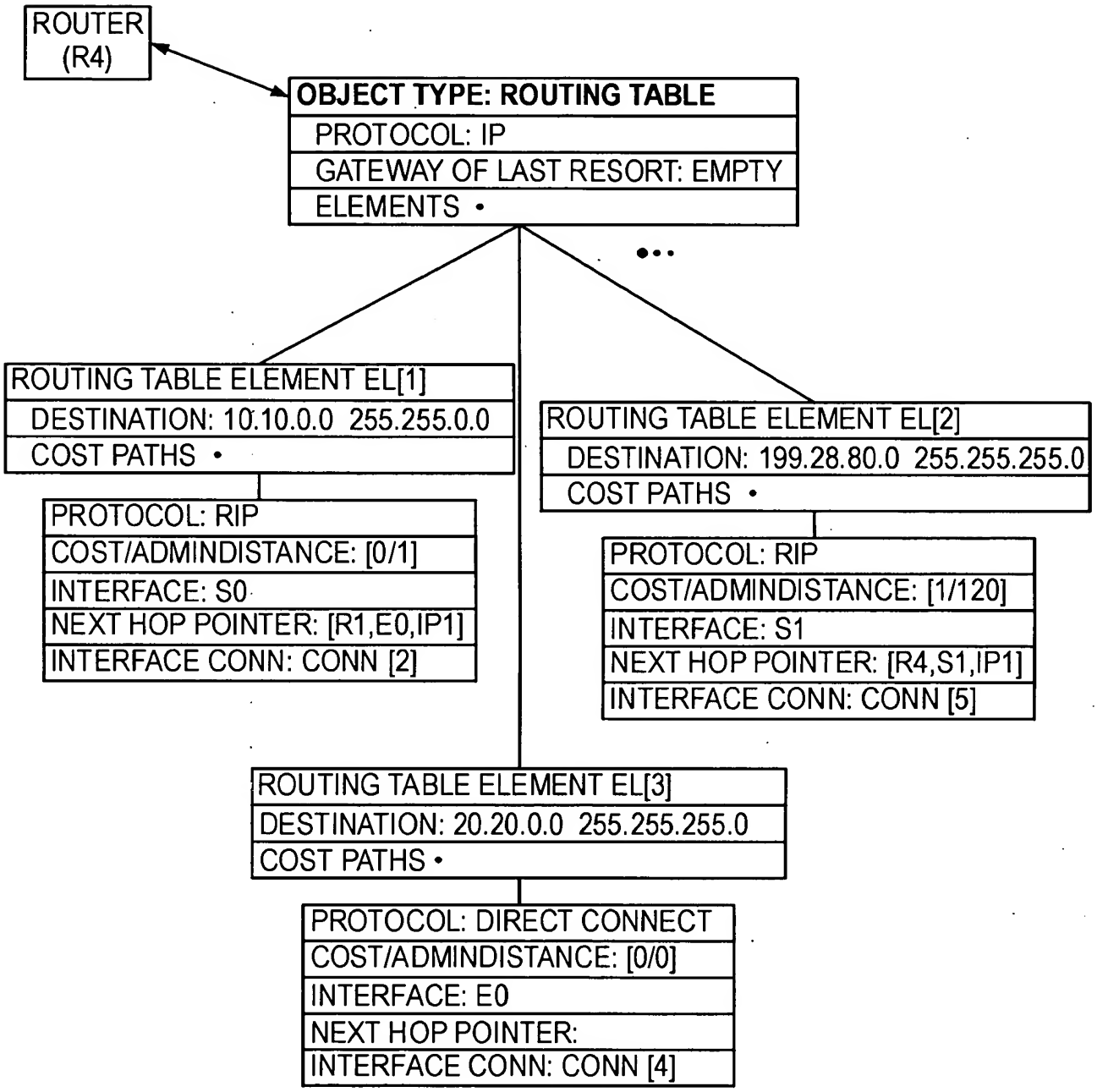


FIG. 52B

10074805 - 052202

20020720 508h200T

NOTE: THE FOLLOWING SEQUENCE OF DATA ELEMENT VALUES AND TOPOLOGY DIAGRAMS SHOWS, STEP-BY-STEP, HOW THE CURRENT PATH SET IS BUILT FROM SOURCE ADDRESS (SA) TO DESTINATION ADDRESS (DA). IN THE DIAGRAMS, NUMBERS REFER TO LOCATIONS IN FIG. 46 AS SIMILARLY LABELED.

BEGINNING AT START, THE PROCESS MOVES AS SHOWN UP TO THE FIRST DECISION BLOCK:

4601-1 CPS={ } (EMPTY) 4602-1 YES 4603-1 SC=CONN[1]

4604-1 DC=CONN [4] 4605-1 NO, SC NOT EQUAL DC

AS OF STEP 4607-1, THE VALUES OF THE ACTIVE PATH SET ARE: APS={[SA;CONN[1];R1, [SA;CONN1];R2]}

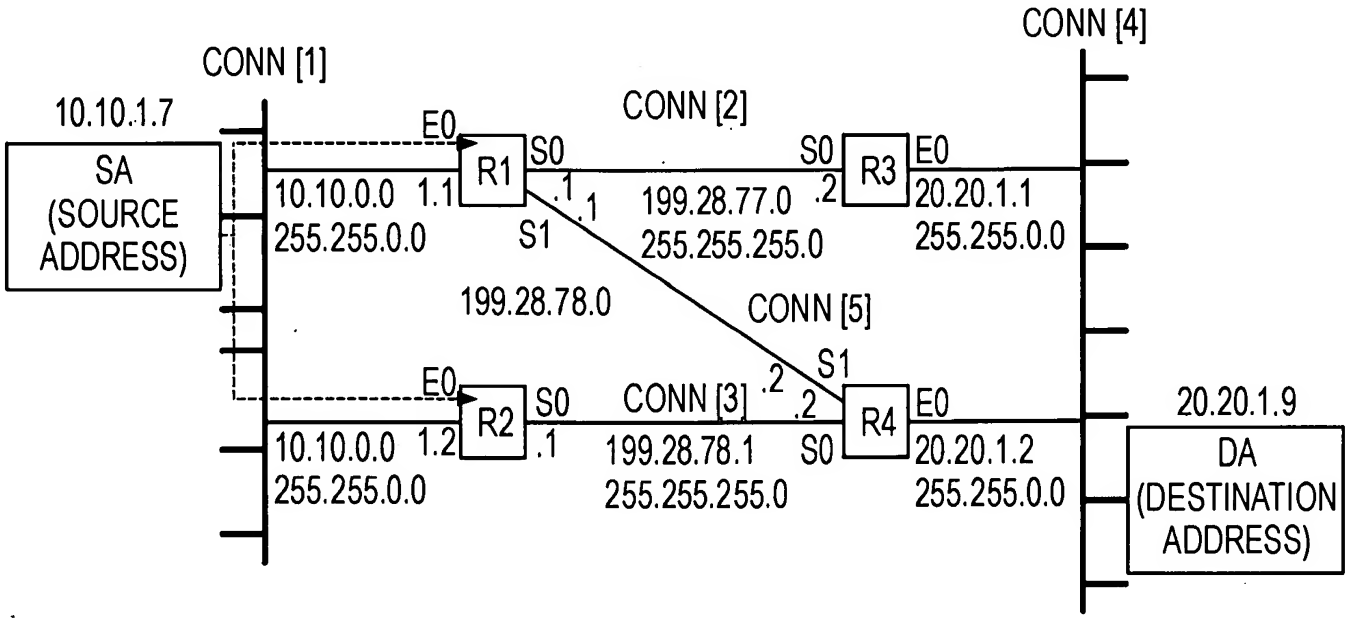


FIG. 53A

Title: Method of Resolving Conflicts in Access Control Lists...
Inventor(s): R. N. Pelavin, et al.
Express Mail Label No. EL652871260U[redacted] Docket No. 50325-0630

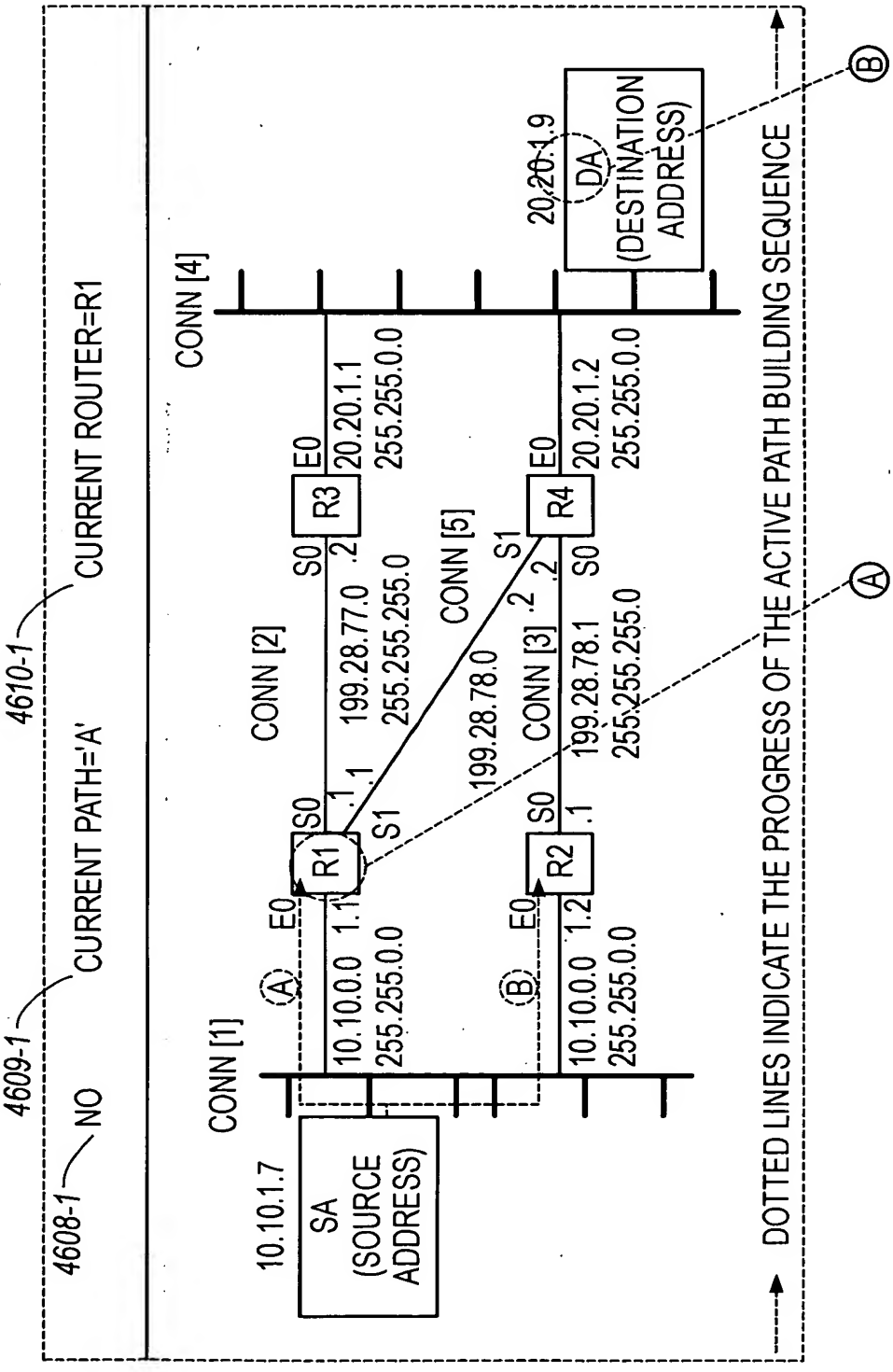

4610-1
CURRENT ROUTER=R1
4609-1
CURRENT PATH='A'
NO
4608-1
DOTTED LINES INDICATE THE PROGRESS OF THE ACTIVE PATH BUILDING SEQUENCE
SA (SOURCE ADDRESS)
10.10.1.7
CONN [1]
10.10.0.0
255.255.0.0
E0
1.1
R1
S0
.1
CONN [2]
199.28.77.0
255.255.255.0
S1
199.28.78.0
CONN [5]
S1
.2
R4
E0
20.20.1.2
255.255.0.0
CONN [4]
20.20.1.9
DA (DESTINATION ADDRESS)
S0
.2
R3
E0
20.20.1.1
255.255.0.0
CONN [3]
199.28.78.1
255.255.255.0
S0
.1
R2
E0
1.2
10.10.0.0
255.255.0.0
A
B

FIG. 53B

20120508h2007

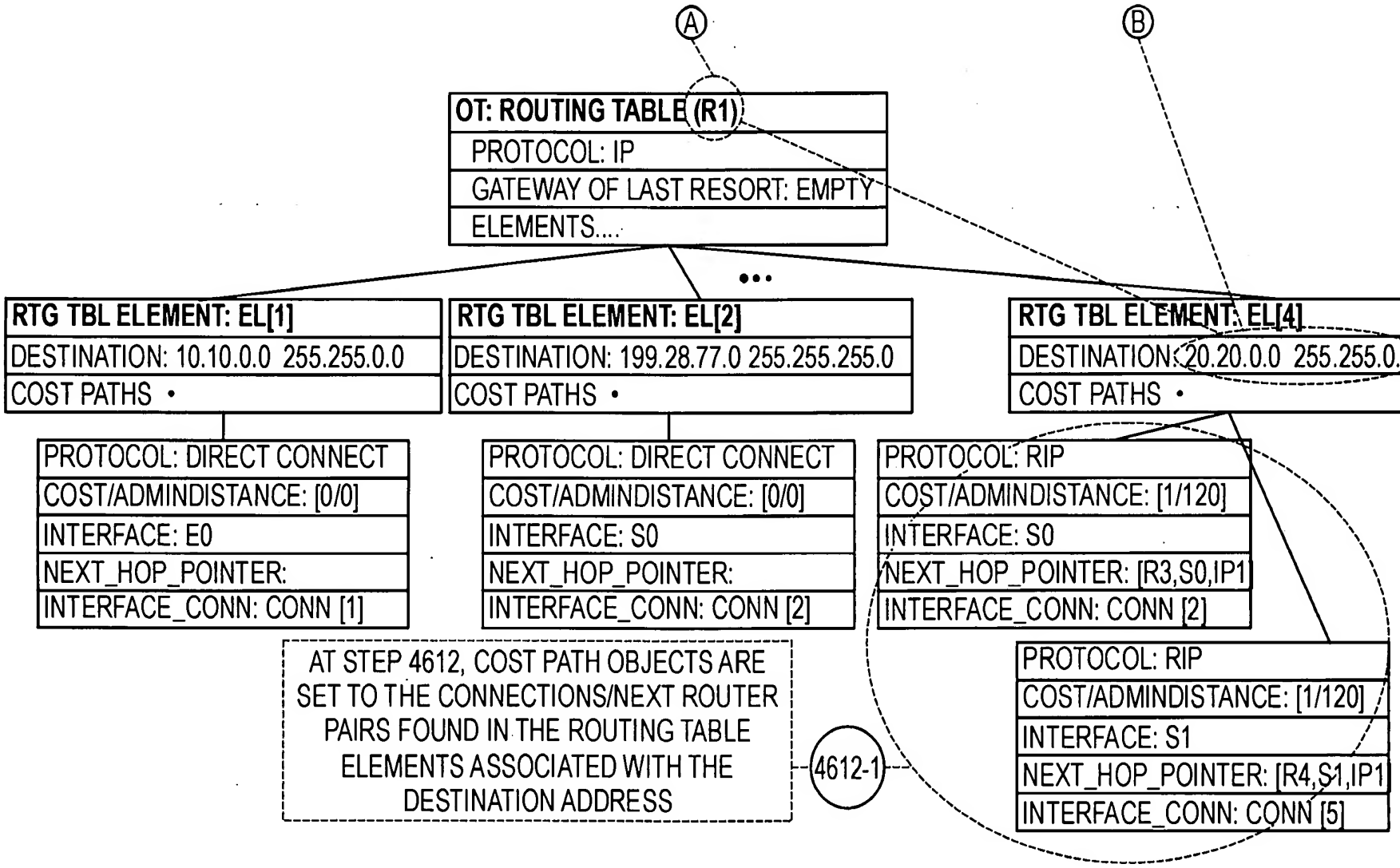


FIG. 53C

Title: Method of Resolving Conflicts in Access Control Lists...
Inventor(s): R. N. Pelavin, et al.
Express Mail Label No. EL652871260U[redacted]cket No. 50325-0630

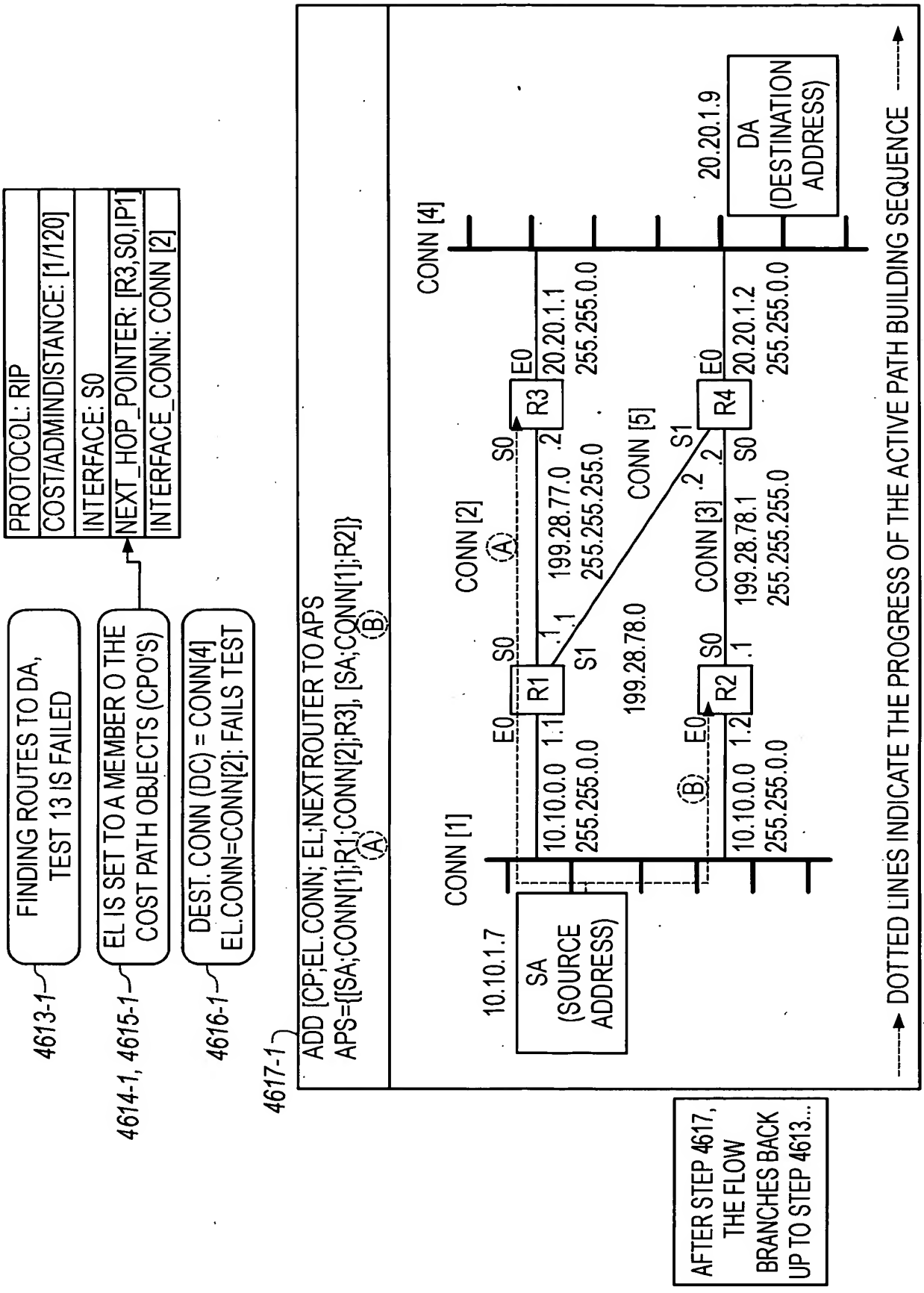

FINDING ROUTES TO DA, TEST 13 IS FAILED
4613-1
EL IS SET TO A MEMBER O THE COST PATH OBJECTS (CPO'S)
4614-1, 4615-1
DEST. CONN (DC) = CONN[4] EL.CONN=CONN[2]: FAILS TEST
4616-1
PROTOCOL: RIP
COST/ADMINDISTANCE: [1/120]
INTERFACE: S0
NEXT_HOP_POINTER: [R3,S0,IP1]
INTERFACE_CONN: CONN [2]
4617-1
ADD [CP;EL.CONN; EL;NEXTROUTER TO APS
APS={[SA;CONN[1];R1;CONN[2];R3], [SA;CONN[1];R2]}
(A)
(B)
CONN [1]
CONN [2]
CONN [3]
CONN [4]
CONN [5]
10.10.1.7
SA (SOURCE ADDRESS)
10.10.0.0
255.255.0.0
1.1
1.2
E0
S0
S1
R1
R2
R3
R4
199.28.78.0
199.28.77.0
255.255.255.0
20.20.1.1
20.20.1.2
20.20.1.9
DA (DESTINATION ADDRESS)
AFTER STEP 4617, THE FLOW BRANCHES BACK UP TO STEP 4613...
DOTTED LINES INDICATE THE PROGRESS OF THE ACTIVE PATH BUILDING SEQUENCE

FIG. 53D

Title: Method of Resolving Conflicts in Access Control Lists...
Inventor(s): R. N. Pelavin, et al.
Express Mail Label No. EL652871260US Docket No. 50325-0630

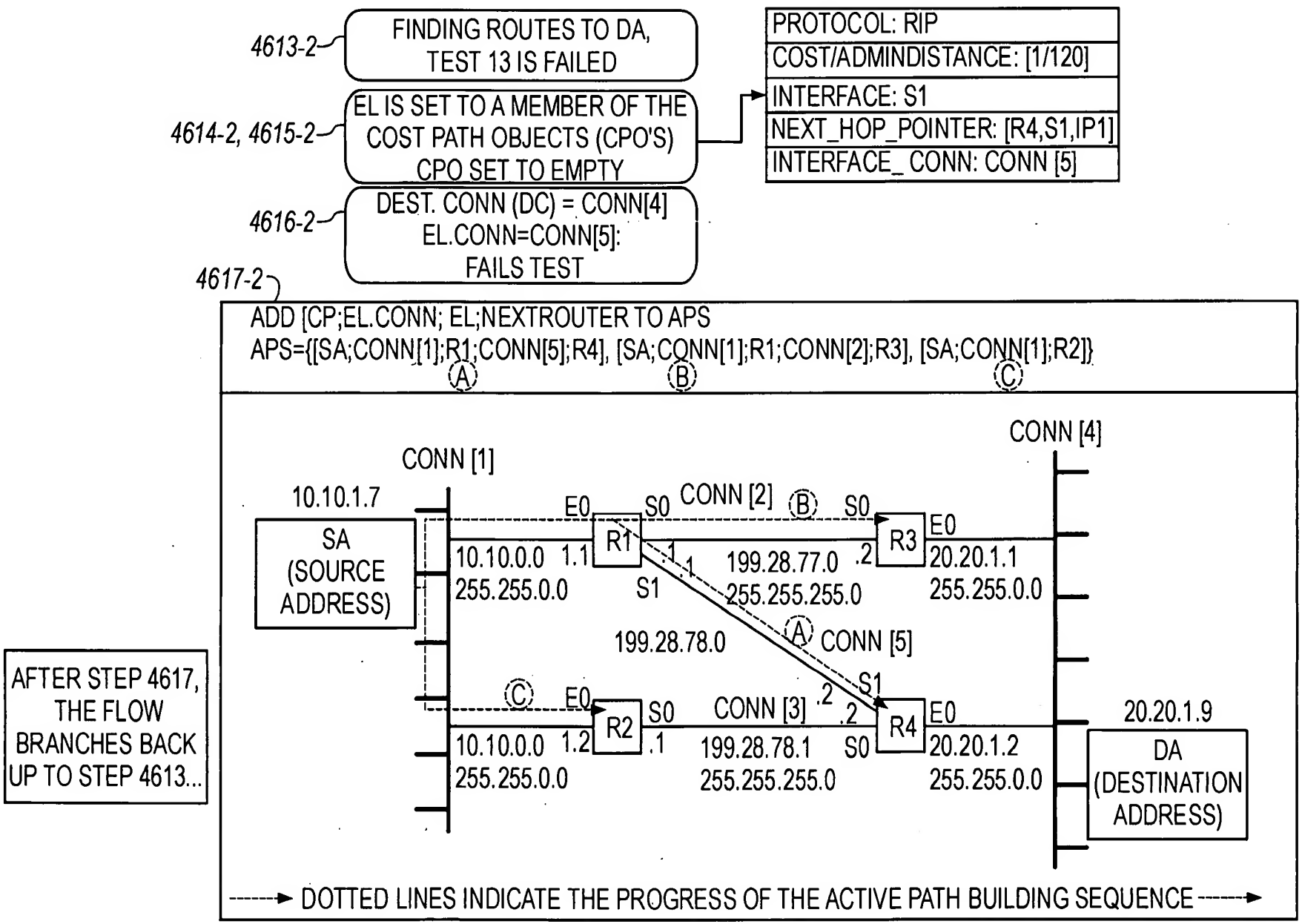


FIG. 53E

ADDED: 05/08/2007

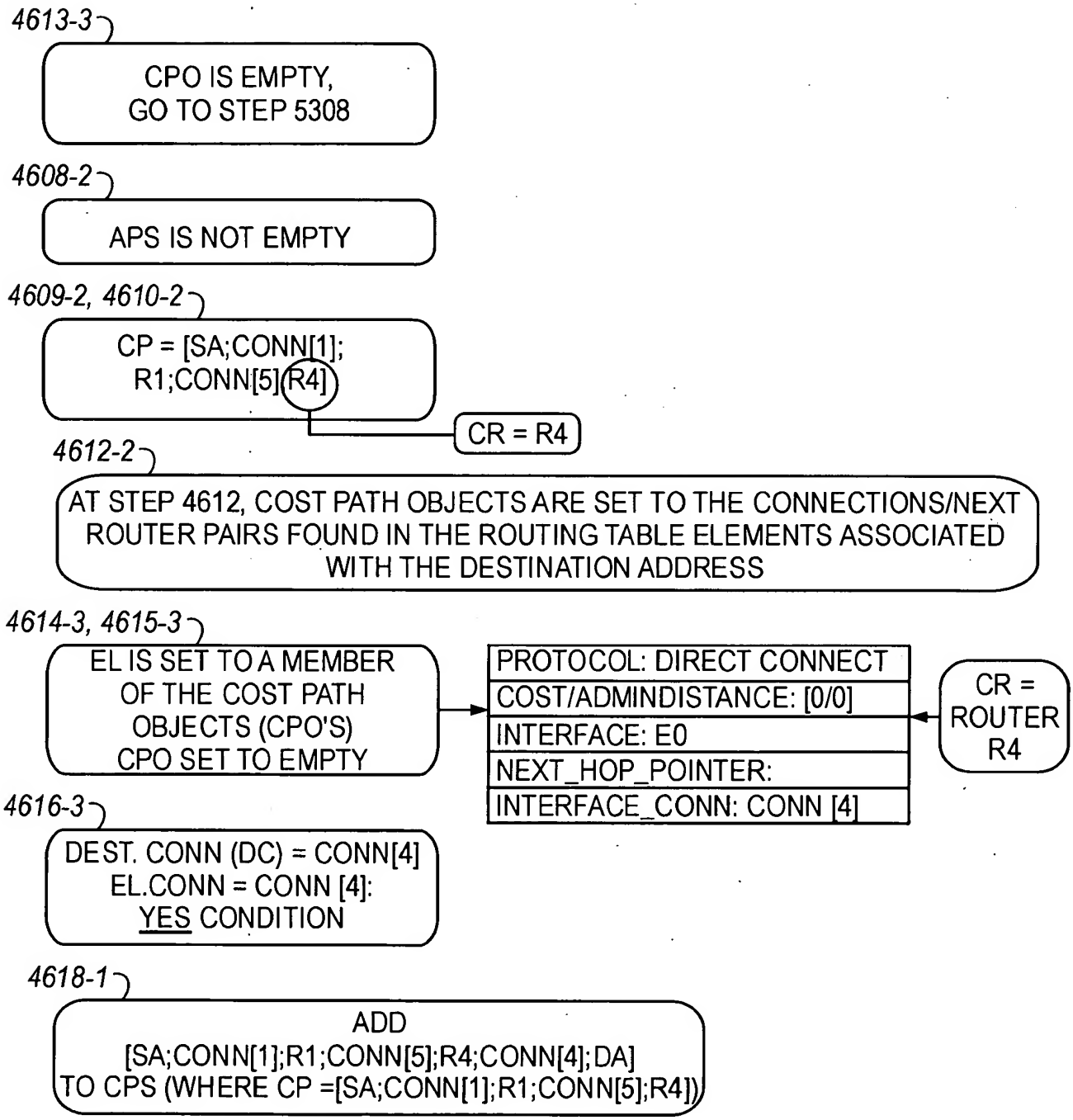


FIG. 53F

5C1C20 "5834207

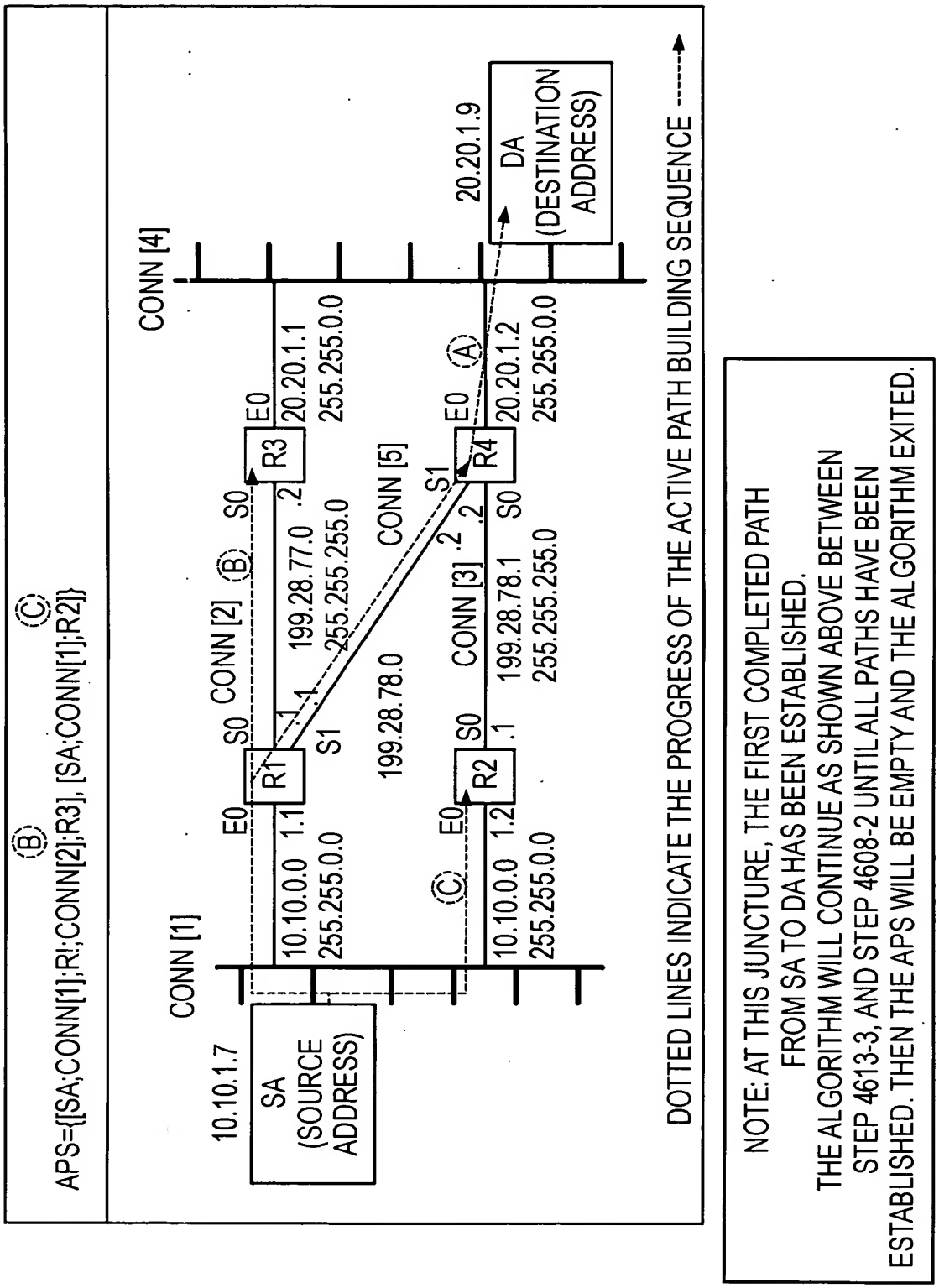


FIG. 53G

09/25/2003 15:08:50 4085250384

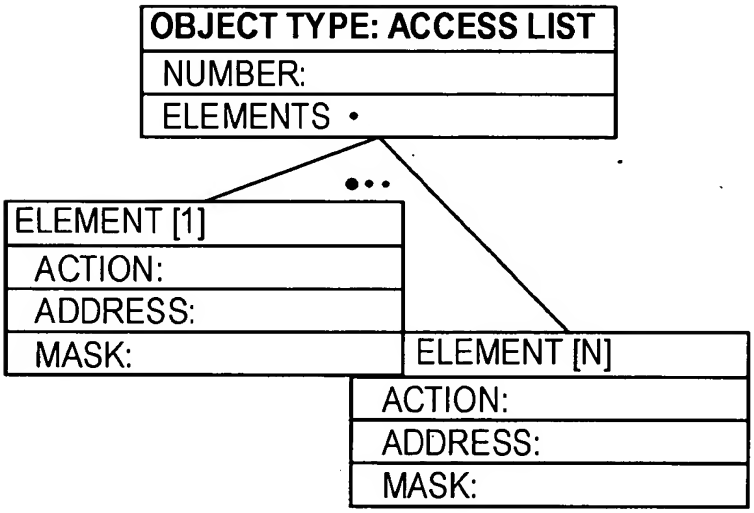


FIG. 54

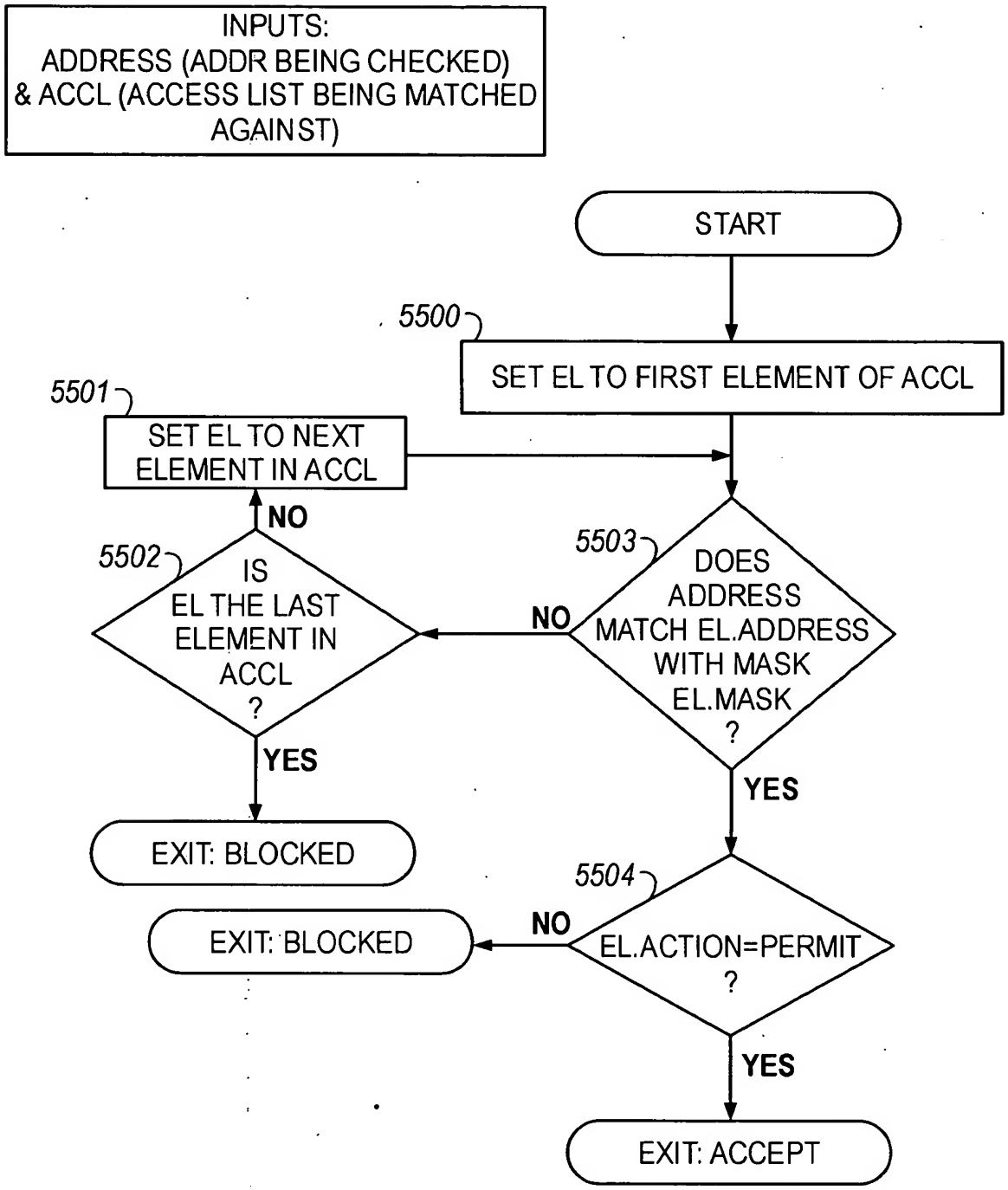


FIG. 55

D0274905.02

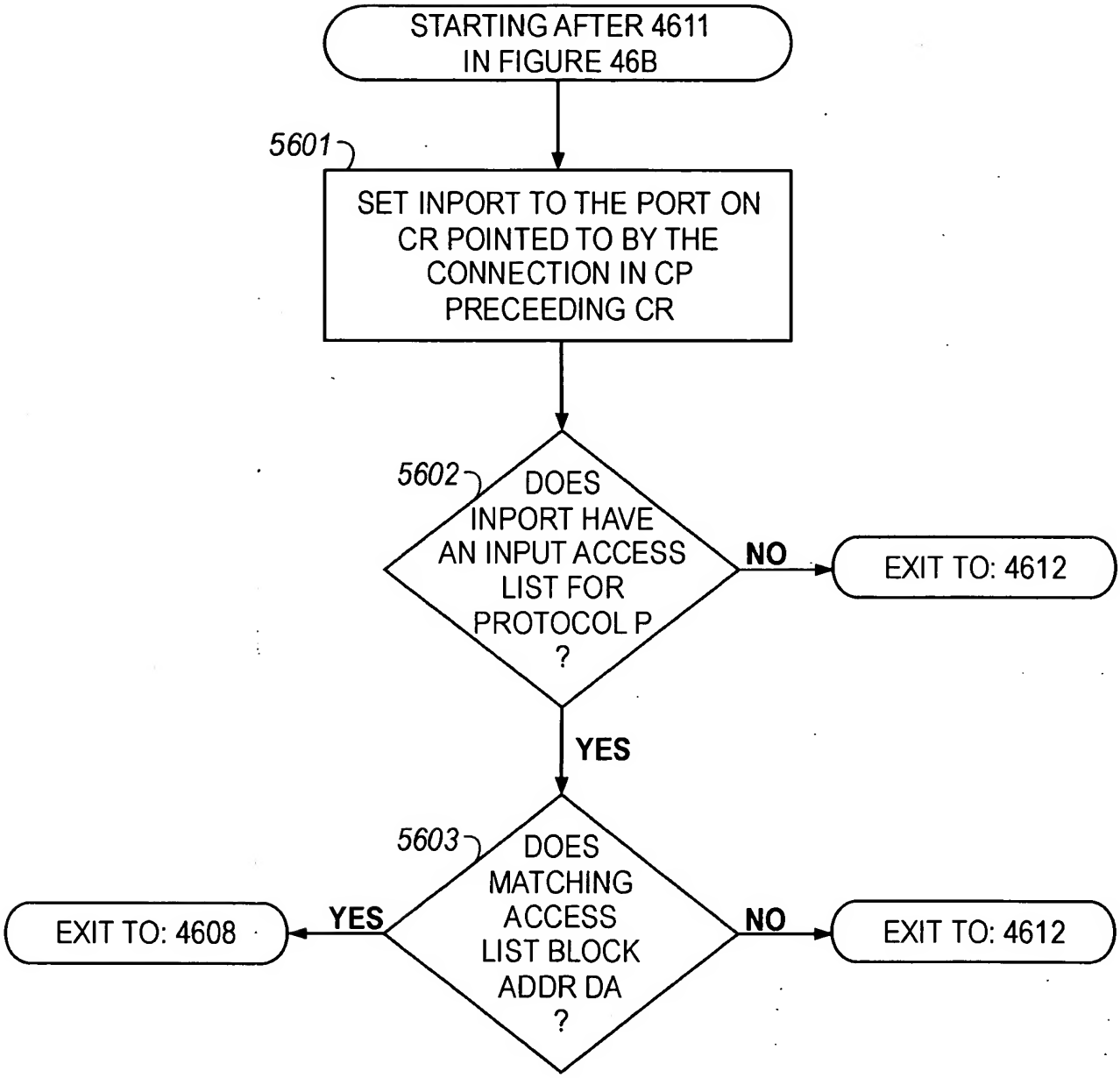


FIG. 56

Docket No. 50325-0630

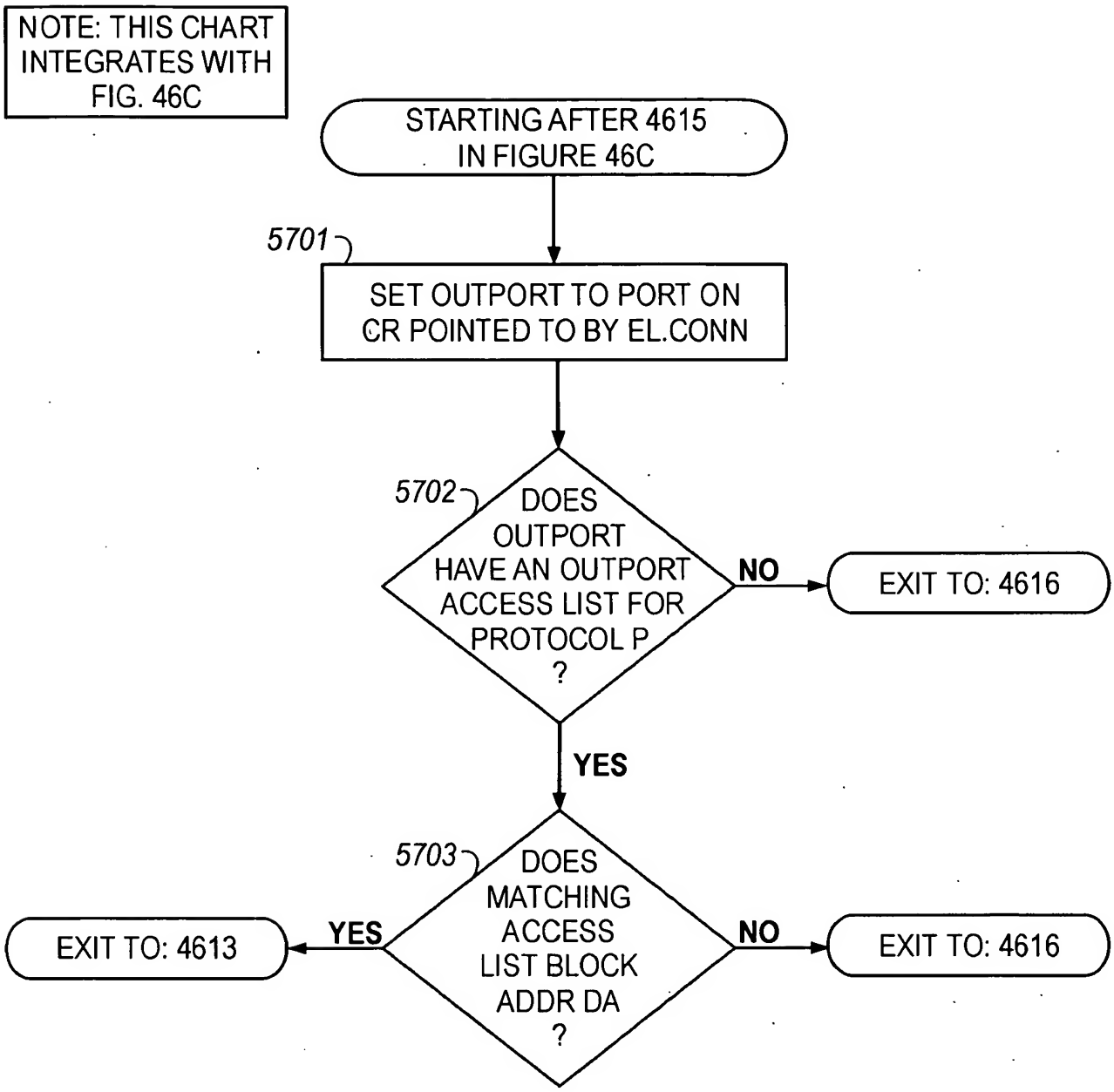


FIG. 57

4005480v1 50325-0630

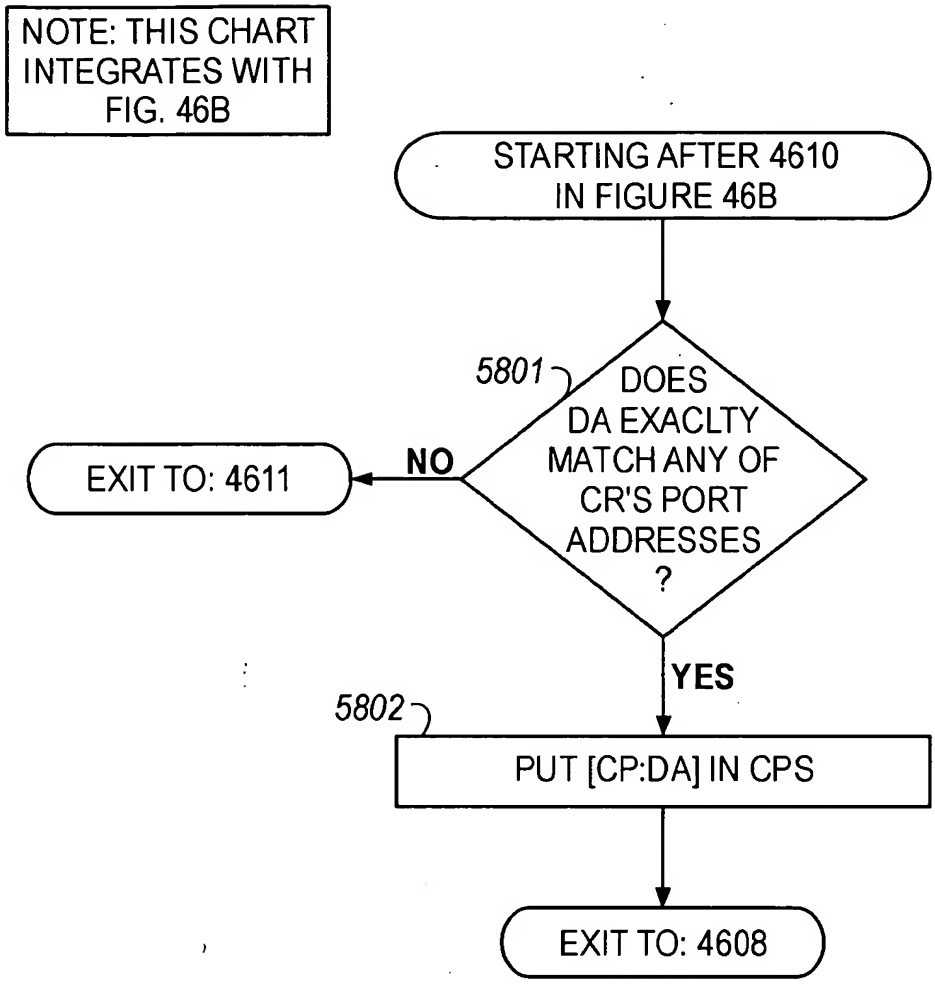


FIG. 58

Attorney Docket No. 50325-0630

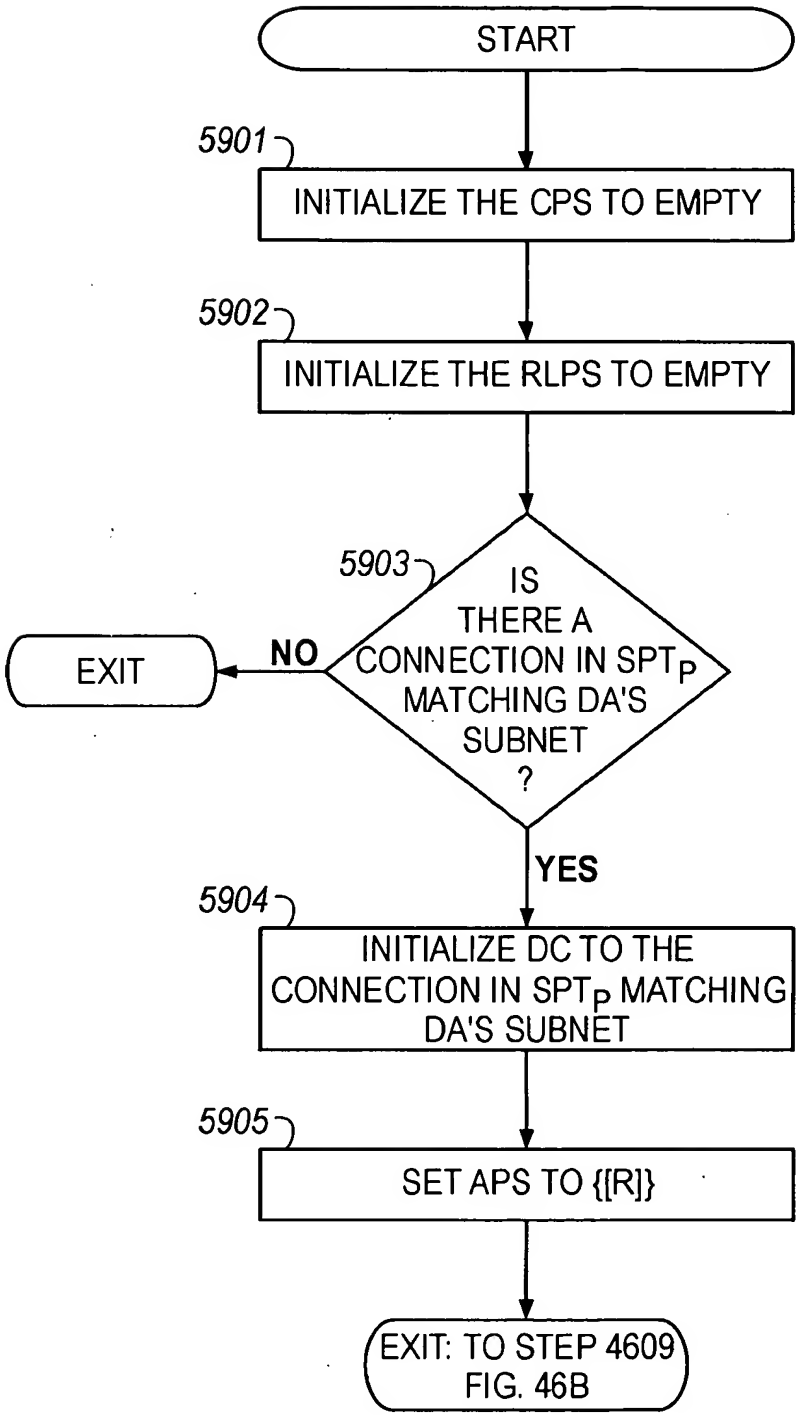


FIG. 59

1007480S.082202

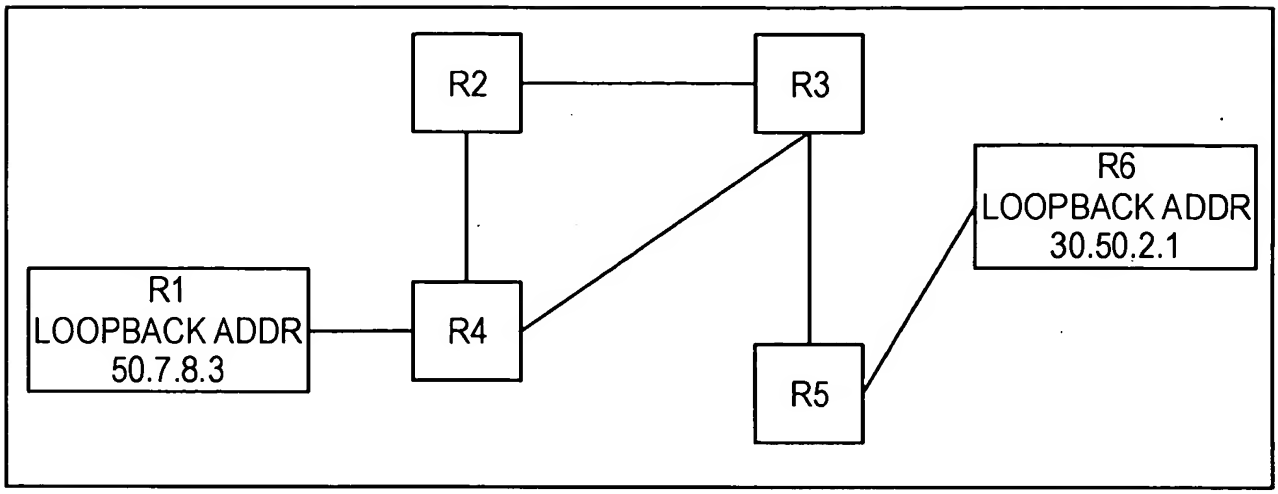


FIG. 60

ROUTER R1:

```
VERSION 10.0
!
HOSTNAME ROUTER1
!
SOURCE-BRIDGE RING-GROUP 7
SOURCE-BRIDGE 7 TCP 30.50.2.1
!
INTERFACE LOOPBACK 1
IP ADDRESS 50.7.8.3  255.255.0.0
!
END
```

FIG. 61A

ROUTER R6:

```
VERSION 10.0
!
HOSTNAME ROUTER6
!
SOURCE-BRIDGE RING-GROUP 7
SOURCE-BRIDGE 7 TCP 50.7.8.3
!
INTERFACE LOOPBACK 0
IP ADDRESS 30.50.2.1  255.255.0.0
!
END
```

FIG. 61B

Docket #50325-0630

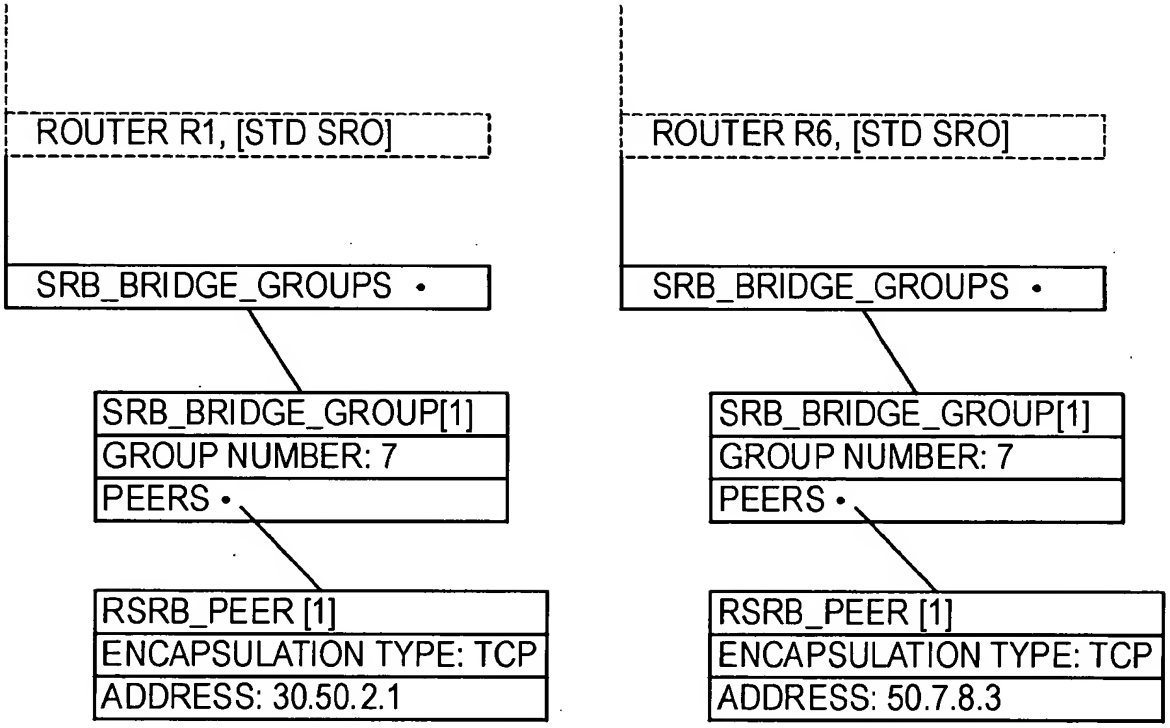

ROUTER R1, [STD SRO]
SRB_BRIDGE_GROUPS •
SRB_BRIDGE_GROUP[1]
GROUP NUMBER: 7
PEERS •
RSRB_PEER [1]
ENCAPSULATION TYPE: TCP
ADDRESS: 30.50.2.1
ROUTER R6, [STD SRO]
SRB_BRIDGE_GROUPS •
SRB_BRIDGE_GROUP[1]
GROUP NUMBER: 7
PEERS •
RSRB_PEER [1]
ENCAPSULATION TYPE: TCP
ADDRESS: 50.7.8.3

FIG. 62

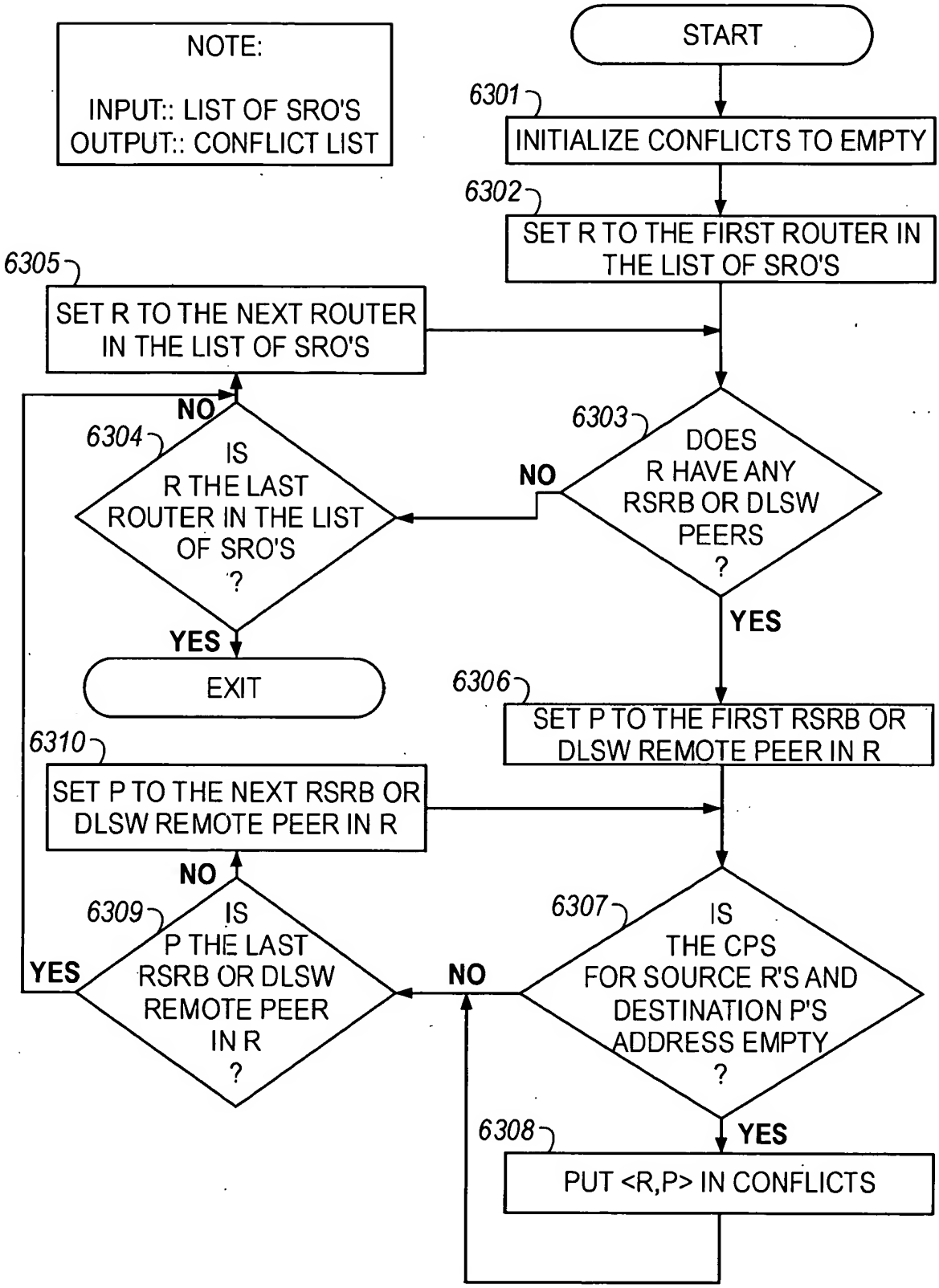


FIG. 63

Docket #50325-0630

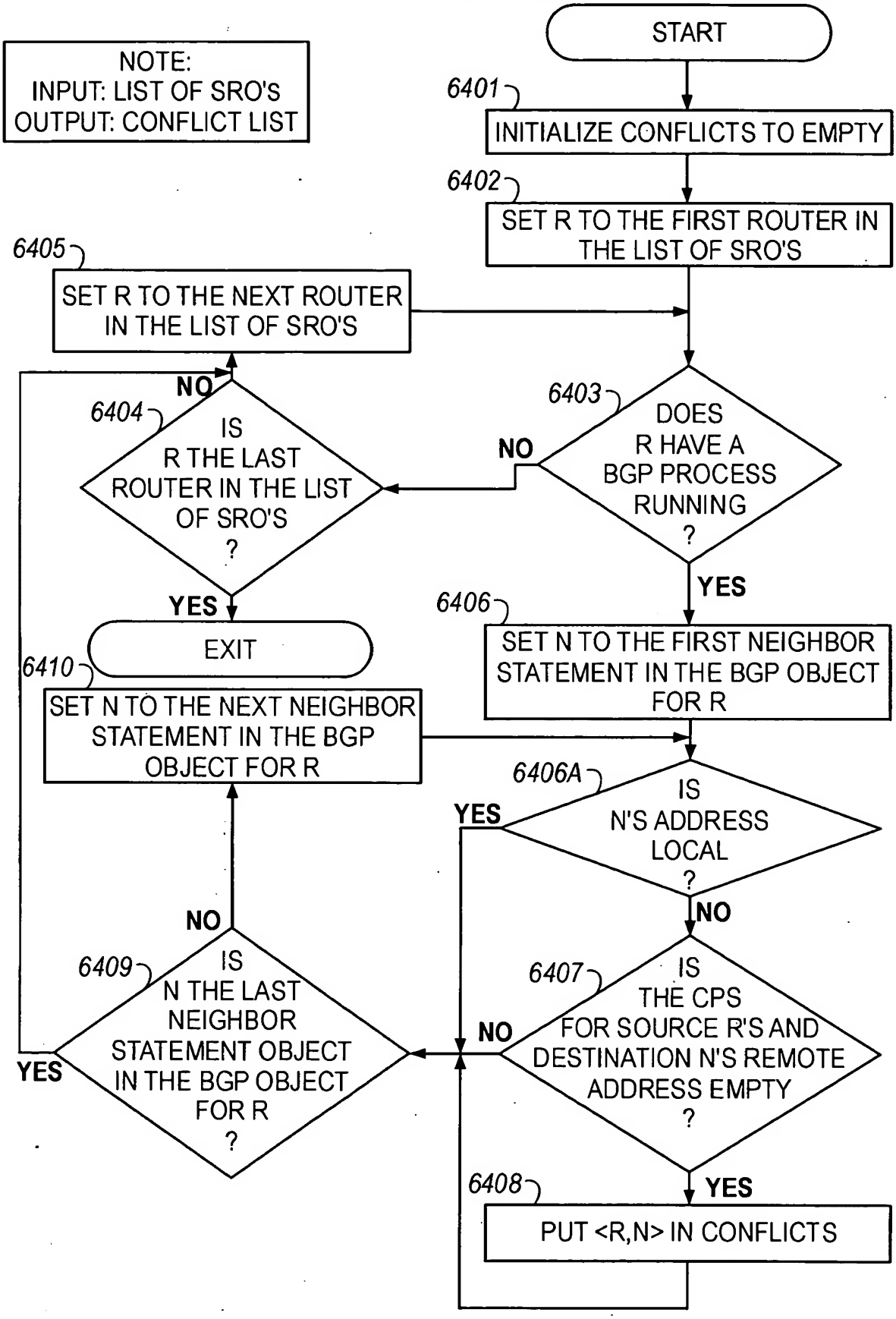


FIG. 64

20020120 "05084207"

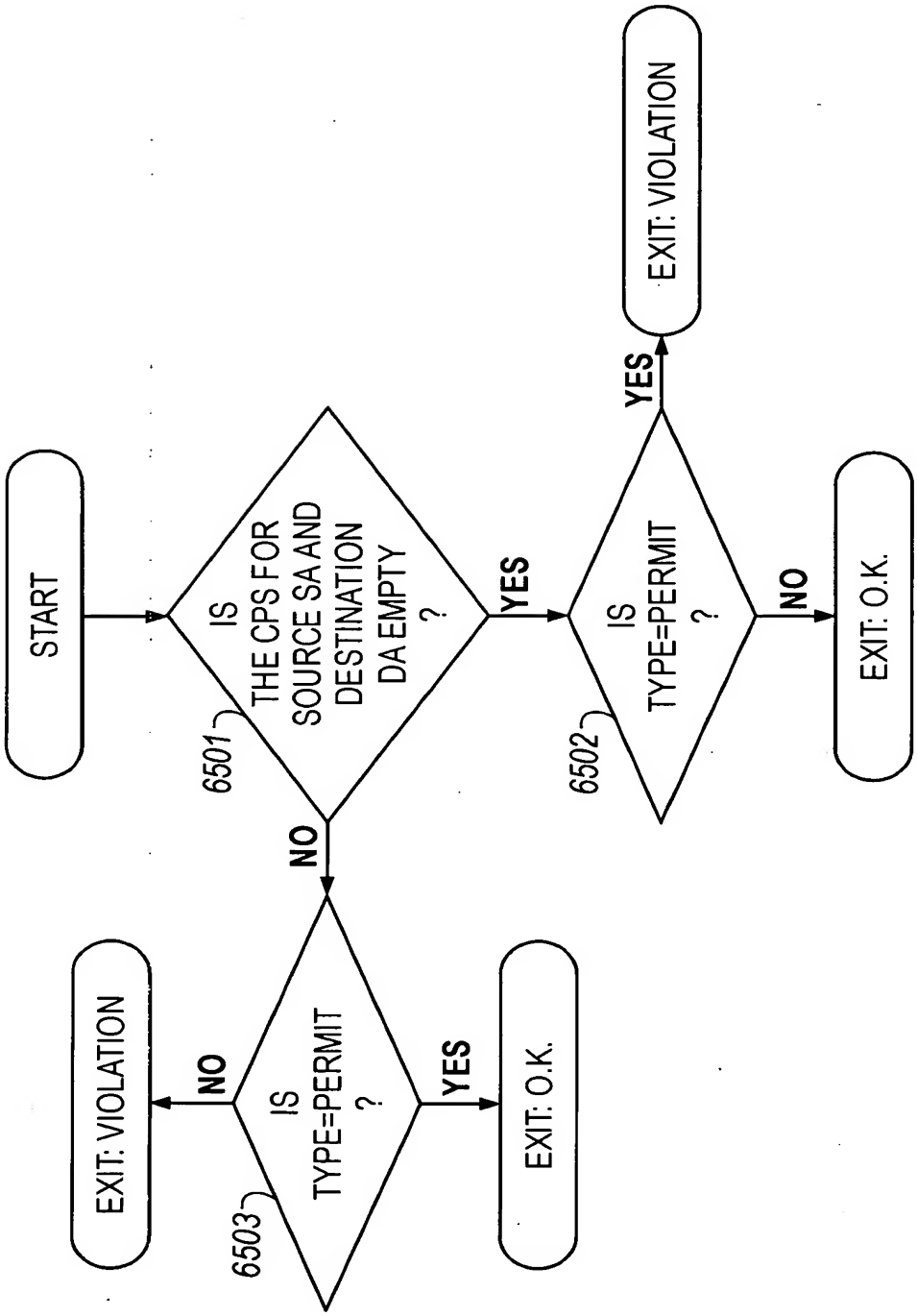


FIG. 65

Docket 50325/0630

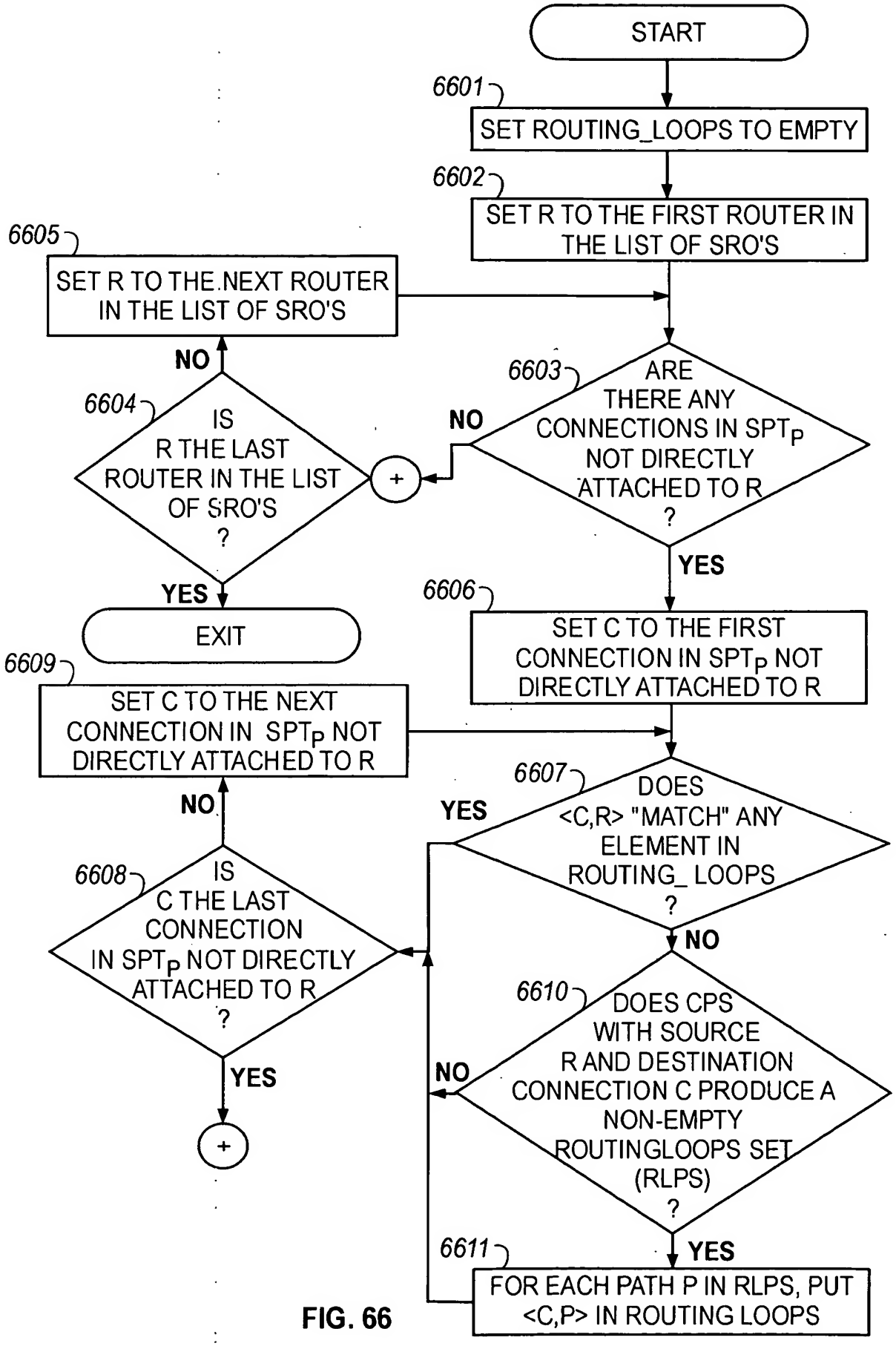


FIG. 66

D02T4805.020204.001

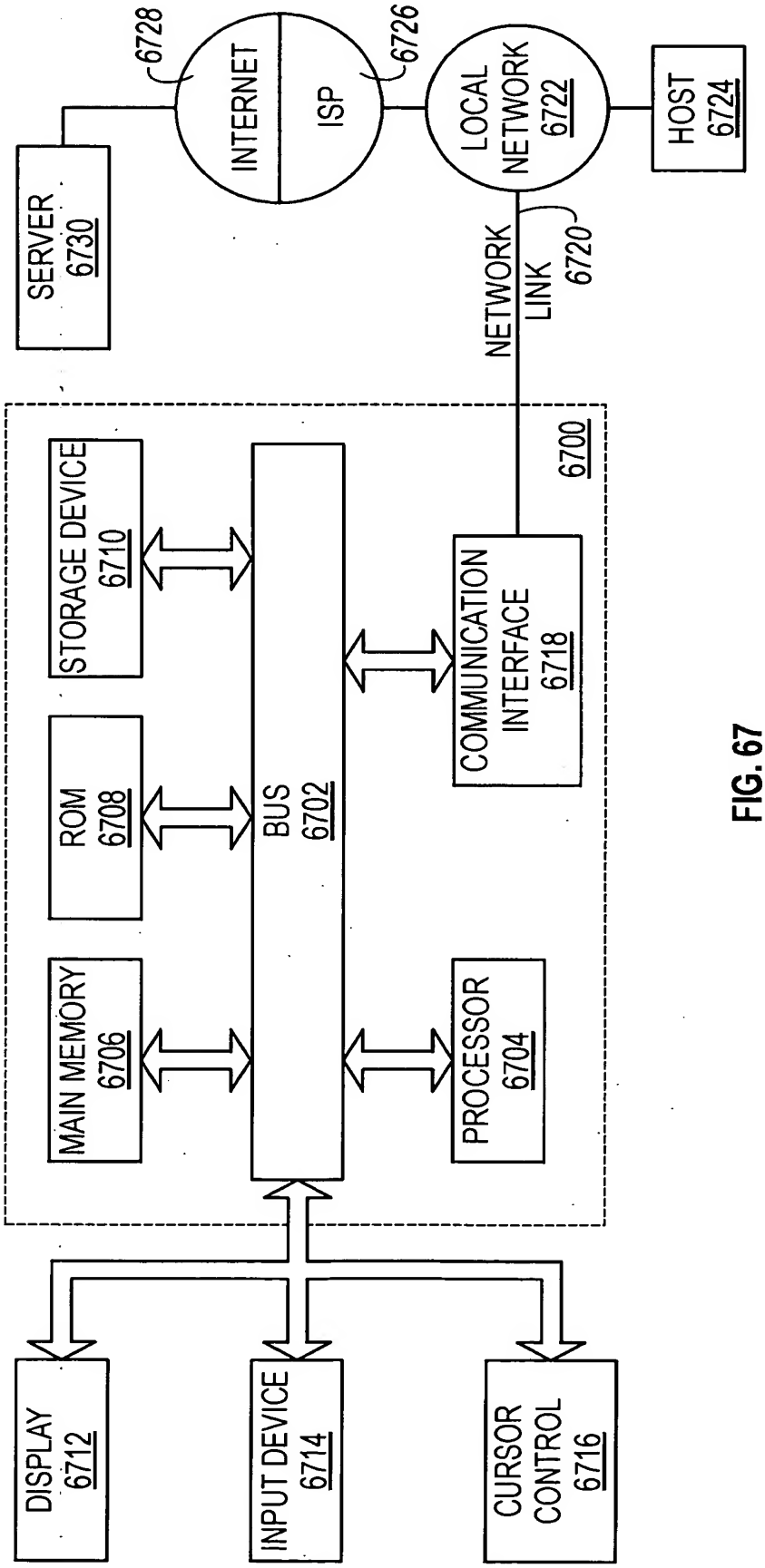


FIG. 67

20020120-5048700